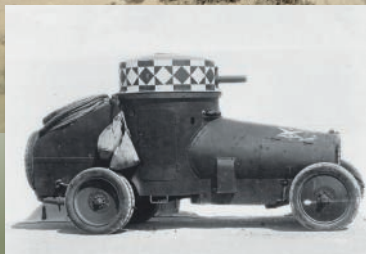


ITALIAN ARMoured & RECONNAISSANCE CARS 1911-45



**FILIPPO CAPPELLANO
& PIER PAOLO BATTISTELLI**

ILLUSTRATED BY HENRY MORSHEAD

NEW VANGUARD 261

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ITALIAN ARMoured & RECONNAISSANCE CARS 1911–45

HISTORICAL BACKGROUND

Early armoured cars, 1911–35

Early in the 20th century Italy was amongst the most innovative countries in the field of military equipment. It was the first to use the aircraft in combat, and developed army motorization as well. Italy pioneered the employment of armoured cars with the FIAT Arsenale, built in 1912 on the chassis of the FIAT 15 ter lorry. Two machines were built and employed in Libya during the 1911–12 war against Turkey. Armed with a 6.5mm Maxim machine gun in a turret, the FIAT Arsenale had a 3mm armoured plate and a maximum speed of about 10km/h. Other details on specifications are unknown.

In 1913 two other armoured-car prototypes were built with private funding. The Isotta Fraschini RM armoured car and the Bianchi 'Automitragliatrice' (machine-gun car) were not developed for mass production, even though the prototypes of the RM and of the 'automitragliatrice' armoured cars were employed during World War I.

The first mass production armoured car (AC) was the Ansaldo-Lancia 1 Z, developed in 1915 with production starting later that same year. First built on the chassis of the Lancia 25/35 HP touring car, and subsequently on that of the Lancia 1 Z lorry, the armoured car had a crew of six, 4mm thick armour, and was armed with three Maxim or FIAT 6.5mm 1914 machine guns. Two of those were mounted in the main turret, the third, arming the top turret mounted above the main one, being intended for anti-aircraft fire.

The first 30 samples produced in 1915 were equipped with a double wire cutter in the front, and the new series produced in 1917 also included redesigned air intakes, an increase from 30 to 60 horsepower (hp), and armoured covering for the machine gun jackets. Armoured rear mudguards were sometimes used after the first series. The third series, produced from April 1918 and known as Ansaldo-Lancia 1 ZM, removed the top turret without reducing the armament. In fact, the 1 ZM still had three machine guns, now 8mm St. Etienne's, two in the turret and one mounted in the rear hull.

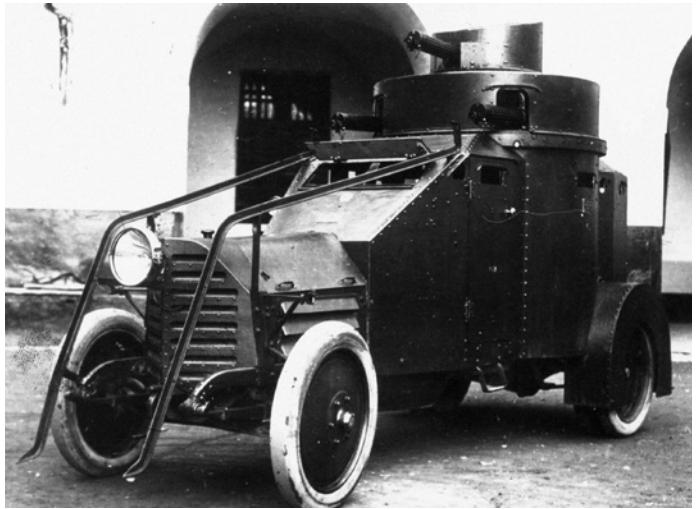
An 'autoblindomitragliatrice FIAT Arsenale' in Libya, 1912. Italy was the first country to make use of armoured cars in combat, this being the first sample to be produced and employed in the 1911–12 war against Turkey. (Archivio Ufficio Storico Stato Maggiore Esercito - AUSSME)



The vehicle retained the crew of six, an overall weight of 4.2 tons, and had the following dimensions: height 2.48m, width 1.82m, length 5.4m. The Lancia 35hp engine and the 4x2 transmission enabled a maximum road speed of 70km/h, and a range of 500km.

Some 150 Ansaldo-Lancia 1 Zs were produced. They were used to equip the first six 'autoblindomitragliatrici' (machine-gun armoured cars) squadrons from 1916, and proved particularly valuable in November 1917 during the retreat that followed the Caporetto defeat, at the end of which 28 1 Zs were still operational. In 1918 the 'Comando Supremo' (supreme command) issued tactical directives for their employment, and in October 1918 17 armoured car squadrons were operational, each with seven Ansaldo-Lancia 1 Zs. They belonged to the cavalry and to the assault divisions within the 'Corpo d'Armata d'Assalto' (assault army corps); each assault division was made up of three regiments, each with two assault (Arditi) units, a Bersaglieri battalion, two mountain artillery battalions, a cyclist Bersaglieri battalion, a cavalry squadron, sappers, one or two motor sections and communications.

In spite of their achievements the 'reparti d'assalto' (assault units) were disbanded in 1921, and at the end of the 1920s the Italian army sanctioned the development of mixed cavalry, infantry, and motorized artillery units supported by armoured units. Those were named 'formazioni celeri': fast units. The 1928 tactical directives foresaw the creation of a 'corpo d'armata celere' (fast army corps, or cavalry) to be used in support of the infantry army corps for reconnaissance. That same year the army inspector for the 'Truppe Celeri' (fast troops) was formed, unifying the inspectors of the Bersaglieri and of the cavalry corps. Two 'celeri' divisions were formed in 1930, but they were not equipped with armoured car units as these had also disappeared from the Italian army tactics.

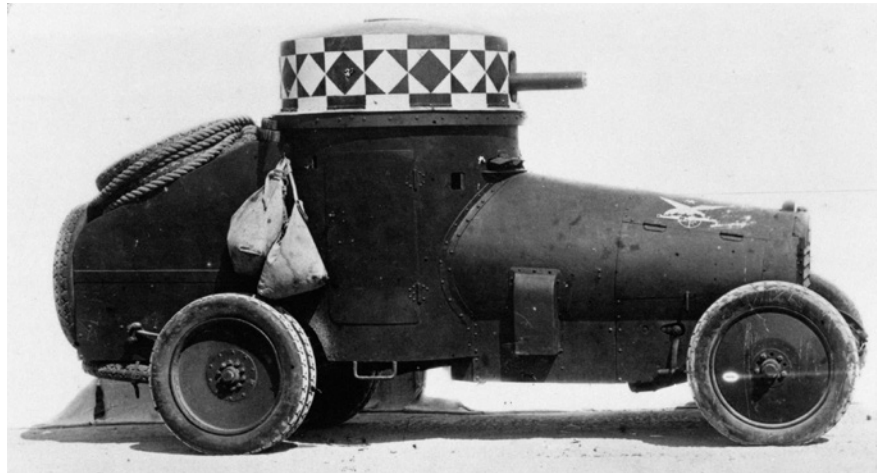


The early version of the Ansaldo-Lancia 1 Z armoured car, with the upper turret armed with a single machine gun. The rails on the front are wire cutters, to cross barbed wire obstacles. (AUSSME)



An Ansaldo-Lancia 1 ZM belonging to an unknown unit at Innsbruck, from the end of World War I. All around the turret these vehicles sported three bands painted in the colours of the national flag. (Cappellano)

A FIAT Terni-Tripoli of the 'Cacciatori di Libia' armoured car squadron in the 1920s. The vehicle sports both the unit insignia on the engine cowling and the turret motif, usually painted in the national flag colours. (AUSSME)



Again, Libya was the proving ground of Italian armoured cars. Fighting the local insurgency from 1922, the Italian army employed several types of armoured cars and tanks. Besides the FIAT Arsenale and the Ansaldo-Lancia 1 Z, and the British-built Lanchester, the three armoured car squadrons formed in Libya also included the newly built FIAT Terni.

Also based on the FIAT 15 ter lorry chassis, the FIAT Terni was manufactured from 1918 and was almost exclusively used in Libya, hence the new name of FIAT Terni-Tripoli. The light armoured car, with a crew of four and weighing about 4 tons, was armed with a single FIAT 6.5mm 1914 machine gun in a turret. Its maximum road speed was some 40–45km/h. It was noticeably smaller than the Ansaldo-Lancia 1 Z having a height

A

1: ANSALDO-LANCIA 1 ZM ARMoured CAR, ITALIAN FRONT, SUMMER 1918

The 1 ZM was an improvement on the early Ansaldo-Lancia 1 Z, with the top turret removed and an aft machine gun added. Armed with 6.5mm Maxim machine guns, the 1 ZMs were then equipped with 8mm French St. Etienne guns, which were subsequently replaced by FIAT 1914 machine guns. Some were armed with captured German Maxims. The 1 ZM was widely employed during the Italian 'Vittorio Veneto' offensive which started on 24 October 1918. In a single day the 7th squadron, with just three 1 ZMs, captured 700 Austrian soldiers and a supplies convoy before seizing two trains loaded with Austrian soldiers and 60 artillery guns during its advance to Trieste. In the days to follow, the 7th squadron captured the entire staff of the 58th Austrian division.

2: FIAT TERNI-TRIPOLI, LIBYA 1920s

Following the Senussi rebellion, from 1922 the Italians started a massive campaign to take total control of Libya. For this purpose the 'Cacciatori di Libia' units were formed with a mixture of local volunteers, army soldiers and Blackshirts. The first unit to be equipped with the 12 FIAT Terni-Tripolis was the IV 'Battaglione Cacciatori', later just known as the 'Cacciatori' (hunters) battalion; it was formed of four armoured car squadrons and also employed tanks. The colours and motifs sported all around the turret were used to denote the different squadrons and companies. The licence plate 'TSM' is a variation of the civilian one; 'T' stands for Tripolitania and 'SM' for 'servizio militare' (military use).

Details:

a: The symbol commonly sported by the armoured car squadrons of the 'Cacciatori di Libia' on the engine cowling; an eagle surmounted by a star (the symbol of the Italian armed forces, replaced by a 'fascio' for Blackshirt units) holding a gunsight crossed by the silhouette of a FIAT 1914 machine gun.

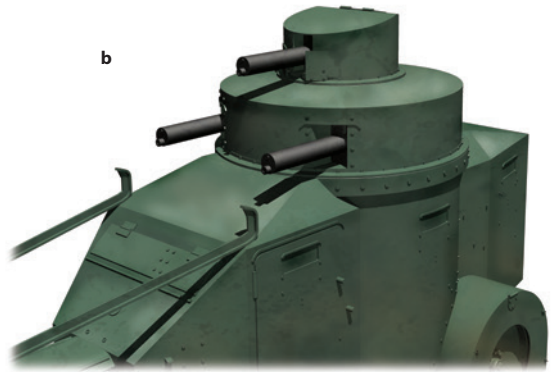
b: An early version of the Ansaldo-Lancia 1 Z, with the top turret. The extra weight and height caused loss of performance and balance, and the top turret (which could rotate independently) was subsequently removed.

c: A cloth badge worn by armoured car machine gunners during World War I.

a



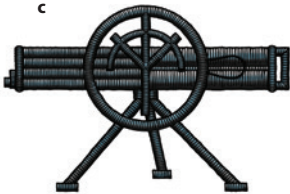
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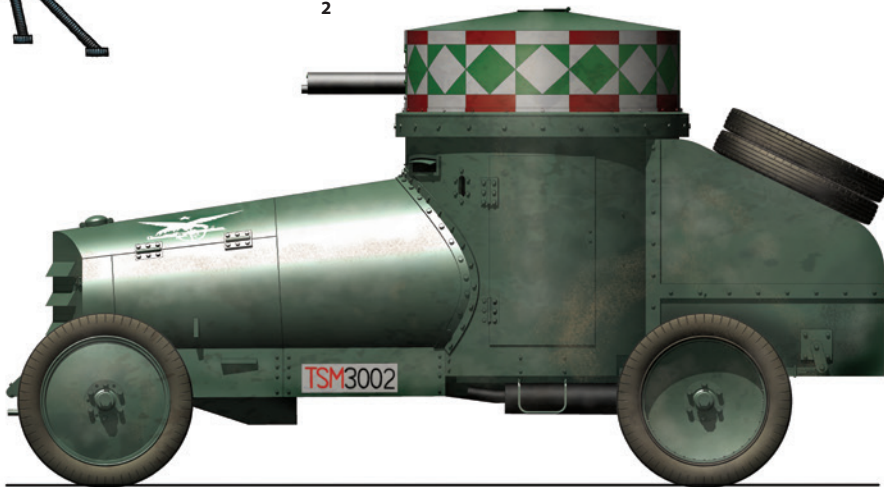
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2





The prototype of the 'autocarrozzi corazzati Ansaldo 1928' on trial in rugged terrain. This unusual combination of large wheeled armoured vehicles halfway between tanks and armoured cars proved unsuccessful, and was abandoned. (AUSSME)

of 2.5m, width 1.9m and length 4.76m. Its range was also reduced to some 270km.

About a dozen samples were produced at the Terni steel factory. From 1919 the Terni-Tripoli equipped the armoured car squadron attached to the 4th 'Cacciatori di Derna' Regiment at Benghazi. In 1925 the remaining eight Terni-Tripoli armoured cars were used to form another squadron along with a Lanchester armoured car, two FIAT 3000 tanks and a number of armoured trucks. The squadron, led by Major Lorenzini and subsequently part of the 'Tripolitania' armoured car group,

also included one armoured car squadron from the '1st Permanent Libyan Legion' of the Blackshirts, the Fascist militia. They took part in 1931 in the seizure of the Cufra oasis in the Sahara.

In 1940 some of the surviving FIAT Terni-Tripoli were modified with their armour being put on the chassis of a modern SPA 38 R light truck. The armoured roof of the turrets was removed, the armoured cars being armed with a single 8mm FIAT 35 and 12.7mm Breda Safat machine guns. They were all lost in December 1940 during the British counteroffensive.

At the end of the 1920s the Italian army had only one single tank and armoured car regiment, mainly valuable as an experimental unit rather than a fighting one. In 1928 the regiment included an armoured car group with four squadrons, each with a dozen Ansaldo-Lancia 1 Zs. In 1931 the group was partly re-equipped with the Carden-Lloyd CV 29 tankettes, the armoured cars being used to equip infantry and Bersaglieri coastal defence units, the police and the 'Carabinieri' (military police), and the Blackshirt units. An armoured car platoon was attached to the marine infantry battalion 'San Marco' at Tsien Tsin, China. Some armoured cars were sold abroad, amongst others to Czechoslovakia, Albania, Austria and Hungary. One sample was donated in 1928 to the king of Afghanistan during his visit to Italy. Its remains, still with most of the original parts, were recently recovered by NATO troops serving in Afghanistan.

INTERWAR DEVELOPMENTS

Lack of interest, and the almost complete absence of a doctrinal debate on the use of armour, hindered the development of armoured cars in Italy. The famous historian J.F.C. Fuller remarked, in fact, that widespread scepticism and diffidence were shown in Italy towards the many debates and developments made abroad with army motorization and with mechanisation. Such an attitude worsened during the 1930s, in spite of the experiences during the Spanish Civil War when the Soviet-built armoured cars were encountered, and in spite of the progressive mechanisation of cavalry

units in both France and Britain. The Ansaldo-Lancia 1 Z was kept in use, despite the fact that its obsolescence had been worsened by recent technical developments: developments that enabled the Italian automotive industry to produce and export not only the artillery tractor Pavesi but also large quantities of lorries and trucks, sold to France, amongst others. The many automotive factories existing in Italy in 1939–40 (Isotta Fraschini, Breda, FIAT, Bianchi, Lancia, and Alfa Romeo) suffered from the lack of interest shown by the armed forces in the development of armoured fighting vehicles (AFVs), and failed to develop any new models.

Formed only in 1930, the army motorization technical service was unable to conceive new AFVs, while the artillery and other branches carried on with their innovations. The consequence was that before the creation of the technical service only a limited number of prototypes were developed, none of which would be mass produced. The first prototype, developed in 1921 by Ansaldo, was the light Corni-Scognamiglio armoured car. Based on a Lancia chassis it incorporated for the first time the dual drive capacity, which meant two driver positions both at the front and at the rear of the armoured car. The vehicle was turretless, armed with two .303in (7.7mm) Lewis machine guns fore and aft, plus a third optional one firing from the open turret hatch. The army rejected it on budgetary grounds, and because of its limited cross-country capabilities.

Seeking armoured cars with cross-country capabilities, in 1925 the army commissioned Alfa Romeo to develop the Corni armoured car mixed with the chassis of the new Pavesi artillery tractor. The result was a large diameter wheeled tank, a concept that was developed until 1929 without much of a result. Based on the Pavesi tractor and incorporating the dual drive capacity, the Pavesi and Ansaldo wheeled tanks were in fact armoured cars equipped with armoured wheels. The first prototype was built and tested by Ansaldo in 1927–28. Its 8mm-thick armour and the 50hp engine enabled a theoretical 50km/h speed on road. The vehicle had a turret armed with a short-barrelled 45mm gun and an 8mm Hotchkiss machine gun. The Pavesi prototype had 1.30–1.50m diameter wide road wheels, 10mm-thick hull armour, weighed 4–5.5 tons, and could reach a road speed of about 30km/h. The first



The prototype of the 'Corni Scognamiglio' armoured car, produced by Ansaldo in 1921 and also known as 'model Nebiolo'. It was the first armoured car to adopt the dual drive system, adopted by the AB 40–41. (Cappellano)

prototype was armed with a 6.5mm FIAT machine gun in a turret, the second one with three 8mm Hotchkiss machine guns in the fore and aft hull and in a turret. Another turretless prototype mounted a 57mm gun in the hull.

None of these prototypes captured the army's interest, as they were now focusing on tracked AFVs while the development of semi-tracked vehicles came to a dead end. In 1930 the army motorization service started to focus on a six-wheeled armoured car to accompany the development of the new tankette, deemed suitable for fast movement on and off road.

FIAT 611 and AB 40

Since the army only started showing interest in armoured cars in 1930, not surprisingly the only new model to be produced was commissioned by the Italian police. The prototype of a 6x4 armoured car was produced in 1932 by FIAT-Ansaldo for the Italian police, based on the chassis of the FIAT 611 colonial truck. The FIAT 611 armoured car had a crew of four, weighed some 5.5 to 6 tons, and had a 6–10mm armour thickness and a 43–48km/h maximum road speed. Also incorporating the dual drive capacity, the first five samples of the FIAT 611 were armed with two machine guns in the turret and one in the hull aft. The second batch, also of five samples, was armed with a 37mm gun in the turret. The FIAT 611 was bulkier than its antecedents; its height was 2.5m, width 2.2m, and length 5.6m. Its range was about 320km.

Incorporated by the Italian police in 1933, the five gun-armed FIAT 611 armoured cars were handed over to the army in 1935 and, after parading in Rome, they were sent to Italian Somaliland and used in the war against Ethiopia. In 1936 the other five machine-gun-armed FIAT 611s were taken over by the army as well, and the surviving operational samples were last employed in 1940 in the conquest of British Somaliland, and in 1941 in the defence of Italian East Africa.



A prototype of the AB 40, with the twin machine-gun-armed turret. Other features that disappeared from the final model were the anti-aircraft gun mount on the turret and the frontal Notek light. (Cappellano)



FIAT 611 armoured cars in use with the Italian police, all painted overall azure blue. These gun-armed vehicles were pressed into army service in 1935 for the war against Ethiopia, and remained in East Africa until 1941. (AUSSME)

The case of the FIAT 611 reveals the Italian army's lack of interest in armoured cars in the 1930s. In 1930 a mixed Italian–Hungarian committee on motorization defined the requirements for a new, light armoured car (maximum height 2.2m, 1.65m track, 30cm ground clearance, 6m turn radius, weight 5 tons) to be armed with one heavy (13.5 or 20mm) or two light machine guns, with a maximum road speed of 50km/h and ten hours' range. The vehicle was never developed, no further requirements for armoured cars being made between 1932 and 1935. In fact the Italian army even suggested a universal ban on assault tanks and armoured cars during the Geneva disarmament conference. Only after the experiences encountered in the field during the war against Ethiopia did this attitude start to change.

In 1935–36 some armoured car units were employed against Ethiopia; like the 1st 'Battaglione autoblindo' (AC battalion) on the Eritrean front, these were made up of a four-platoon AC company with 16 Ansaldo-Lancia 1 Zs and a motorized machine gun company. On the Somali front two squadrons were employed, one equipped with Ansaldo-Lancia and FIAT 611 armoured cars. A squadron with eight Ansaldo-Lancia 1 ZMs (the latest version) was sent to Spain with the Italian volunteer corps taking part in the Civil War. Several captured vehicles, both Soviet and locally produced, were also pressed into Italian service, and the Soviet BA-6 armoured car eventually made the need for a new model of armoured car clear.

The comparison between the BA-6 and the Ansaldo-Lancia 1 ZM was revealing; the former was armed with a 45mm gun in the turret, was technically updated, and possessed better armour and speed. In 1936 General Pugnani was to remark on the need for the Italian army to have a fast-moving vehicle for reconnaissance. In his view the fast, machine-gun-armed armoured car was the best solution. Nobody took any notice. In September 1937 the headquarters of the Italian volunteer corps in Spain remarked on the usefulness of the armoured cars with the reconnaissance units, the best solution for the task otherwise assigned to other, non-suitable type of units. What was needed was a modern armoured car; smaller and less visible than the 1 ZM, with improved armour, equipped with a gun in a turret mount and machine guns fore and aft the hull. The most important issues were speed and manoeuvrability, on road more than off road. This also required the dual drive capacity, clearly practical for use on narrow or urban roads.

Ansaldo-Lancia 1 ZM in Libya, part of the armoured car squadron belonging to the 'Cacciatori di Libia' (Libya's hunters) unit. The vehicle is overall grey-green, and around the turret is the three-colour band in use since 1918. (Cappellano)



In 1938 the commander of the armoured units with the volunteer corps sanctioned these requirements, speed and manoeuvrability, in a memorandum sent to the army staff. The armoured car was delegated essential tasks, thanks to characteristics not available to other vehicles like the light, fast tank which could not replace the armoured car, only support it. In 1937–38 the army centre for motorization studies examined two Austrian-built 6x4 and 8x8 armoured cars, at the time considered the more modern and evolved ones, along with the Hungarian V4 light tank. The inspector of motorization developed the project for a heavy six-wheeled armoured car, and the war ministry commissioned the SPA factory with the development of an armoured car that eventually evolved into the AB 40.

A rear view of the AB 41 showing the early type exhausts, the rear machine gun ball mount, and the rear driver visor slot close to the nearside of the vehicle. The rear turret hatch was used to remove the 20mm gun. (Cappellano)



The SPA Ansaldo had been developing three prototypes of an armoured car since 1937, two for the army and one for the Italian Africa Police (Polizia dell'Africa Italiana, PAI) and the first prototypes were presented on 15 May 1939, one for the army and the other one for the PAI. On 22 July one of them was presented to Mussolini. Both the army and the PAI tested their prototypes, the former during the field exercises in Piedmont and the second with a 13,000km tour in Italian East Africa. A standard model for both

the army and the PAI was developed, and at the end of March 1940 the SPA was commissioned to build a total of 185 samples, nine of which were for the PAI. Another 54 samples were commissioned in January 1941 for export to Yugoslavia, never to be delivered.

The new armoured car, designated AB 40 (autoblinda 1940), was adapted from the chassis of the FIAT-SPA light artillery tractor, whose developed transmission system it adopted. The six-cylinder engine was linked through a drive plate clutch and an overdrive crash-type gearbox to a distribution box located approximately at the centre of the vehicle. The drive was then transmitted to each one of the four steering wheels via reduction gears. This enabled five forward, and overdrive, speeds and four in reverse. The dual drive capacity was made possible, mostly for emergency situations, by a second hull-aft driving position with steering wheel and basic drive controls. Each wheel had hydraulic, coil-spring-type suspensions with shock absorbers. Two free-wheeling spare wheels mounted on the hull sides were intended to avoid bellying when crossing steep obstacles.

The AB 40 had a weight of 6 tons, a crew of four (commander-gunner, first and second driver, rear machine gunner and radio operator), and a 78.38km/h maximum road speed. The flat armoured plates, bolted or riveted to a framework in turn bolted to the chassis frame, were 8.5mm thick, and 6mm on the roof and bottom. Armament included two 8mm Breda 38 machine guns in the turret, and a single Breda 38 machine gun in the hull aft ball mount. The prototype for the PAI was to include an anti-aircraft machine gun mount on the turret, a modified turret external light, and externally mounted extra equipment. Those characteristics disappeared in the final production models, identical for both the army and the PAI.

Production delays caused the first five samples to be delivered only in March 1941, with 17 more delivered by July 1941. Shortage of optical and gunnery sighting was one of the hurdles, the SPA and the Ansaldo Fossati actually producing some 340 more chassis and frameworks. In the end only relatively few AB 40s were produced, the early samples being used mostly for training or modified as railway armoured cars. In 1941 the introduction of the new 20mm-gun-armed turret led to the new AB 41 type, also incorporating a more powerful 80hp, 6,000rpm engine.

Inside view (from offside) of the rear machine gunner and driving seats, showing the rear machine gun mount, the rear driver wheel and seat, the reduced instrument panel, and the fuel tank. Note the closed hull access door. (Cappellano)





WORLD WAR II

The AB 41 armoured car

When Italy entered World War II in June 1940, its army hardly had a mechanised and armoured force of either tanks or armoured cars to rely on. Following the creation in 1936 of the 'motomeccanizzata' (motorized-mechanised), brigade and of the first two armoured brigades in 1937, no armoured car units had been considered at all. Reconnaissance duties were assigned to motorcycle

A rear view of the prototype of the command AB 41, with the modified upper hull portion and the turret and rear driver/machine gun position removed. (AUSSME)

companies, and even the first armoured divisions formed in 1938 had no proper reconnaissance units. Army regulations introduced that same year did not mention armoured cars at all. Only in November 1938 did the war ministry issue specifications for a new armoured car vehicle, with the aim of introducing only 48 of them into service. In spite of the experience gained from field exercises in Libya, which suggested the use of armoured cars equipped reconnaissance units at corps level, none were available when Italy entered the war.

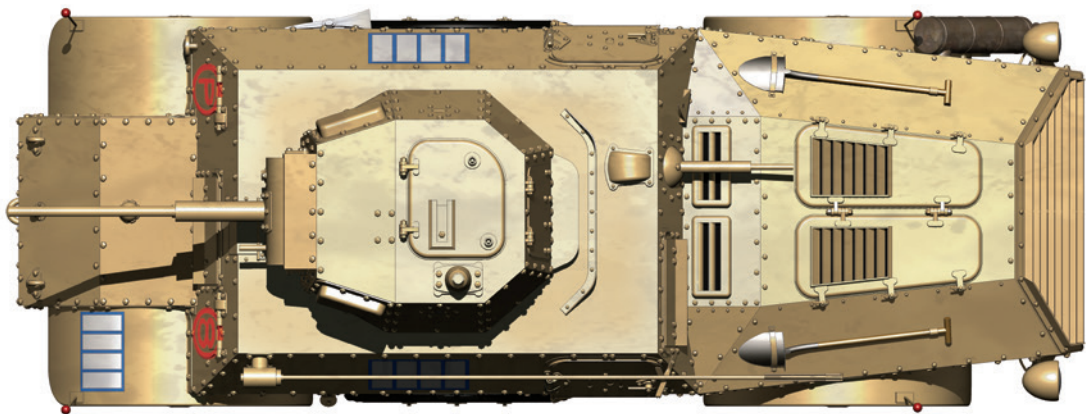
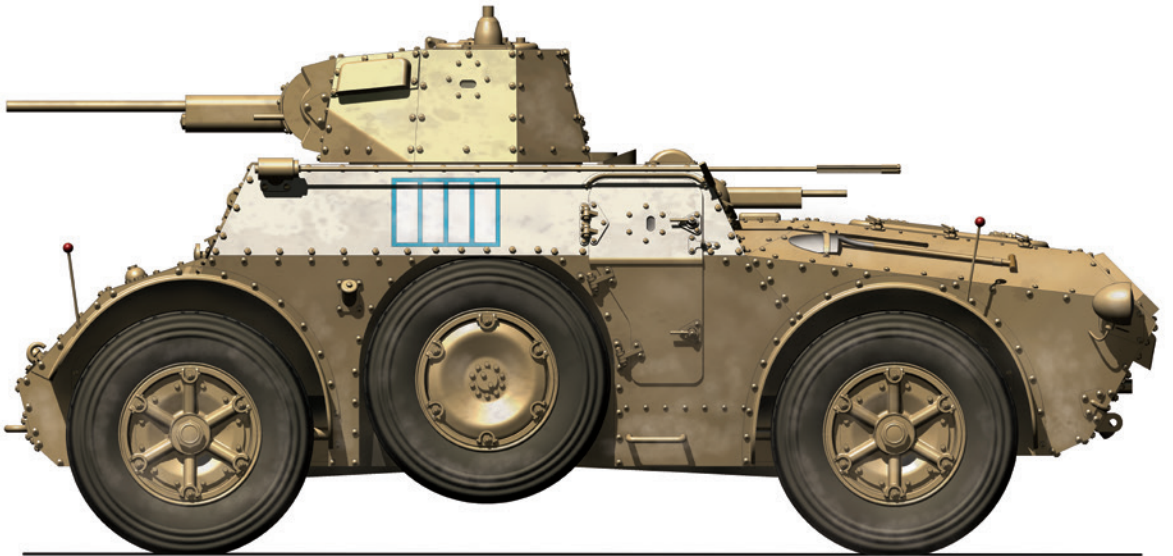
There was more than one reason for such a delay. First of all the Italian army was not interested in tropical warfare, focusing instead on the European theatres of war that, for Italy, mostly meant mountainous and rugged terrain. That made armoured cars unsuitable for reconnaissance purposes. More suitable for that purpose was the light, fast 'tankette' CV 29 deemed to possess better cross-country capabilities than any armoured car. At least on paper. Furthermore, the cavalry corps still had a great influence. In 1940 the Italian army had three cavalry divisions largely equipped with horse-mounted units, still surviving years later. In 1939–40 articles in the cavalry journal exalted the horse and the sabre, considered the basic weapons arming the cavalry charge which was still supposed to scare the enemy.

The consequences were rather serious. After some experiments involving the new, fast CV 33 tank in 1938, that was withdrawn from the cavalry regiments and was assigned to cavalry armoured units amongst the cavalry divisions. No Italian army division possessed a reconnaissance unit, not even at corps level. Bureaucracy also hampered the development of reconnaissance units and of armoured cars. Both Libya and Italian East Africa were only

B

ANSALDO AB 41 ARMoured CAR, LIBYA 1942

Formed between the end of 1941 and early 1942, the III group of the 1st 'Nizza' Cavalry Regiment was one of the first cavalry units to be equipped with armoured cars. It was meant to include three squadrons for a total of 58 armoured cars, but the III 'Nizza' was sent to Libya with only two squadrons and a field artillery battery. The group HQ had four armoured cars, each squadron having a total of 18 armoured cars: two in the squadron HQ and four in each one of the four platoons. Group HQ's armoured cars sported a red and azure rectangle, each squadron HQ armoured car using a single colour (red or azure) rectangle. Armoured cars within the squadron used the following symbols: a white vertical bar matching the platoon number (one bar first platoon, two bars second platoon, etc.), in theory surmounted by Arabic numbers showing the armoured car within the platoon. This detail was clearly not used by the III 'Nizza'. The actual meaning of the red circle and letter/number 'P' and '8' painted on the covers for the headlamp is unknown.





The AB 41 on display at the entrance of the 'Nizza' Cavalry Regiment barracks. Unusually painted white, probably on the occasion of some festivities, the vehicle is otherwise in good condition, still retaining most of its original accessories. (Cappellano)

A column of FIAT Terni-Tripoli in Libya. The armoured cars sport an unknown insignia, an army star on a white square. Half a dozen of these vehicles, modified, were still in use in Libya in 1940. (AUSSME)



partly subordinated to the army staff, their local army units being mostly under the supervision of the military office of the ministry of colonies, a kind of miniature army staff lacking the full resources of the real one. That contributed to both the Libya and East Africa commands relying mostly on outdated weapons and vehicles, in spite of their requirements. In June 1940 Air Marshal Italo Balbo, governor and commander in chief in Libya, was to beg for some of those 'magnificent German armoured cars' he had seen in action in the newsreels. He never got them. In June 1940 the

Italian army only possessed a few armoured cars, mostly dating back to World War I. These included some ten FIAT 611s in Eastern Africa, seven rebuilt FIAT Terni-Tripoli in Libya, and 34 surviving Ansaldo-Lancia 1 ZM armoured cars, both in Italy and the colonies.

This soon proved to be a serious shortcoming. In August 1940 Field Marshal Graziani, who had replaced Balbo in command in Libya after his death, had to remark on the effectiveness of the British armoured car units (equipped with the outdated Rolls Royce 1924 Mk I and Morris CS9), that constantly harassed the border area with their raids. Given the unavailability of Italian armoured cars, his requests for the supply of these vehicles could not be satisfied, and only an armoured car platoon equipped with French Laffly 15 TOE could be formed with vehicles handed over by the French army in Tunisia following the armistice agreements. The Italians started to make greater use of gun-mounted trucks ('portees'), armed with guns and machine guns, whose limited speed and cross-country capabilities did not permit them to deal on an equal footing with the British armoured cars that were in fact rather vulnerable.

The first armoured cars sent to Libya, and the first to be employed, were the AB 41s of PAI's 'Romolo Gessi' battalion and of the special armoured car company arriving in September 1941. The ten PAI AB 41s were followed by three AB 41s of the experimental armoured car platoon of the 'Nizza' Cavalry

Regiment. All these AB 41s had no radio apparatus installed. The 'Romolo Gessi' battalion and the armoured car company became part of the newly formed 'Raggruppamento Esplorante Corpo d'Armata di Manovra' (RECAM), the reconnaissance unit part of the armoured (manoeuvre) corps formed in mid-August with the armoured 'Ariete' and the motorized infantry 'Trieste' divisions.

The RECAM later also included the 'young fascists'

infantry regiment, two 65/17 truck-mounted gun battalions, the LII medium tank battalion, and the III/32° tank battalion equipped with a mixture of armoured cars and light tankettes. In January 1942 both the RECAM and the 'Romolo Gessi' battalion were disbanded, their place being taken by the newly formed 'Raggruppamento Celere Africa Settentrionale' and by the 'Raggruppamento Esplorante Corazzato' (RECo). They were part of the armoured corps, now renamed XX Corps and still formed by the 'Ariete' armoured and 'Trieste' motorized divisions.



Limited production of the AB 41 – 250 samples by the end of 1941 and 302 in 1942 – greatly limited the actual employment of the vehicle in spite of the progress made with the creation of reconnaissance units. Early in 1942 the 12th 'autoraggruppamento' (motor group) formed the 'Raggruppamento Celere Africa Settentrionale' (fast group North Africa) in Libya, consisting of two fast groups, each one with one armoured car squadron (48 AB 40–41s in total), infantry and artillery support. About the same time the III group of the 1st 'Nizza' Cavalry Regiment was transformed into an armoured car unit and sent to Libya, where it joined the 'Ariete' division forming its RECo, armoured reconnaissance group. The VIII Bersaglieri battalion was likewise transformed and attached to the 'Trieste' division. Each one included two armoured car squadrons or companies, with a strength, on paper, of 40 armoured cars. The IV group of the 1st 'Nizza' Cavalry Regiment was also transformed into an armoured car unit and sent to Albania and Yugoslavia, part of the local 'Raggruppamento Celere', at the end of 1942 when it was detached from the 'Littorio' armoured division.

Noticeably, there was a huge difference between the number of armoured cars produced and those actually sent to the operational areas. In mid-1942 there were 53 AB 40s and 40 AB 41s in North Africa with the III 'Nizza', the VIII Bersaglieri, the 3rd PAI Company and the 'Raggruppamento Celere'. Between July and December 1941 15 armoured cars were sent to North Africa, followed between January and June 1942 by 83 others. In June 1942 the III 'Nizza' had a total of 38 (serviceable and not) armoured cars, the VIII Bersaglieri 31. In August and September 1942 both units were down to a total of 28 armoured cars, their strengths recovering by October 1942.

The still largely incomplete units deployed 25 armoured cars with the III 'Nizza', 12 with the VIII Bersaglieri, and 38 with the newly arrived III 'Cavalleggeri di Monferrato' group. Formed in 1941 this was sent to Libya from July 1942 and was attached to the 'Raggruppamento Sahariano' (Sahara group) for the defence of the desert oasis. It would be followed by the RECo 'Cavalleggeri di Lodi', formed in January 1942 with one armoured car group and one self-propelled gun group. It began to arrive in Libya only

The most useful purpose of dual drive in the desert: to present the engine to enemy fire to protect the crew. An AB 41 from III 'Nizza' group in Egypt, 1942 (see plate D). (AUSSME)



A column of AB 41s entering the Siwa oasis in 1942. They show no badge or recognition symbol, which makes the national flag not just an accessory but a necessity for identification. (Cappellano)

in November 1942, being eventually employed in Tunisia.

The battlefield experience of the North African campaign provided the last push that led to the creation and the reorganisation of army reconnaissance units. Now the cavalry too acknowledged the importance of armoured cars, necessary for a task the cavalry could no longer perform as required. In the second half of 1941 the 'Raggruppamenti Esploranti Corazzati' (RECo – Armoured Reconnaissance Groups) were formed, and this was followed by the establishment of other reconnaissance units. The RECo was made of a headquarters with an armoured car platoon, an armoured car battalion (HQ and two companies), and a mixed support battalion with motorcycle, anti-tank and anti-aircraft units. Tables of organisation included a grand total of 47 armoured cars which, considering the need for replacements, greatly hampered the actual creation of RECo. Likewise the creation of the 'Nuclei Esploranti Corazzati' (NEC, armoured reconnaissance nucleus), each to include nine armoured cars, would not start until 1943.

Available numbers of AB 40–41s never sufficed for the task assigned, even though actual production seems to have largely exceeded field employment. That was almost customary in the Italian army, a large number of vehicles being used for training, kept in the depots, or cannibalised for spare parts. In 1942 the AB 40–41s were supplied not only to the army but to police forces as well, delaying the creation of new units.

On 15 July 1942 the 8th 'Lancieri di Montebello' Cavalry Regiment was transformed into a RECo including one armoured car and one self-propelled gun group. It was followed by the 10th 'Lancieri di Vittorio Emanuele II', transformed into an armoured regiment like the 16th 'Cavalleggeri di Lucca' group, all to become part of the new 'Ariete II' armoured division formed in Italy in 1943 and named after Italy's most famous armoured division. Some ten AB 40–41s in the railway version were used by the 'compagnia autonoma autoblindo ferroviarie' (independent railway armoured cars company) in

Yugoslavia, the vast majority of the AB 41s to equip single reconnaissance units (each in small numbers, about eight vehicles per unit) between the end of 1942 and early 1943.

The most famous, and demanding, theatre of war for the AB 40–41 armoured cars was Northern Africa. After the El Alamein battle the remnants of the 'Nizza' group withdrew to Tunisia where they joined the 'Monferrato' and 'Lodi' groups. The 'Centauro' armoured division had an armoured car platoon too. In April 1943 those units had a total of 59 armoured cars in running order, and 43 more under repair.

The majority of the units equipped with armoured cars fought in Italy in September 1943 against the Germans, following the surrender of Italy. Apart from the 'Lancieri di Montebello' part of the new 'Ariete' division, armoured car units included: the 'Nucleo Esplorante Corazzato' (NEC, armoured reconnaissance platoon) of the cavalry school with nine vehicles, the armoured car platoons of the NEC of the infantry divisions 'Pasubio', 'Sassari', 'Sabauda' and 'Aosta' (each with eight vehicles). Some AB 40–41 armoured cars were also employed by the Italian police and by Blackshirt units on the eastern border against Yugoslav partisans. Four independent army platoons were likewise employed in Yugoslavia along with five armoured cars equipping the 5th Bersaglieri regiment, while armoured car platoons also equipped two independent Bersaglieri companies in Albania and Greece. An armoured car platoon was also attached to the 'Vicenza' division sent to the Eastern Front in 1942.

Although a modern vehicle by every standard, comparable to the German SdKfz 222 and the British Humber Mk 1–3, the AB 40–41 soon revealed a



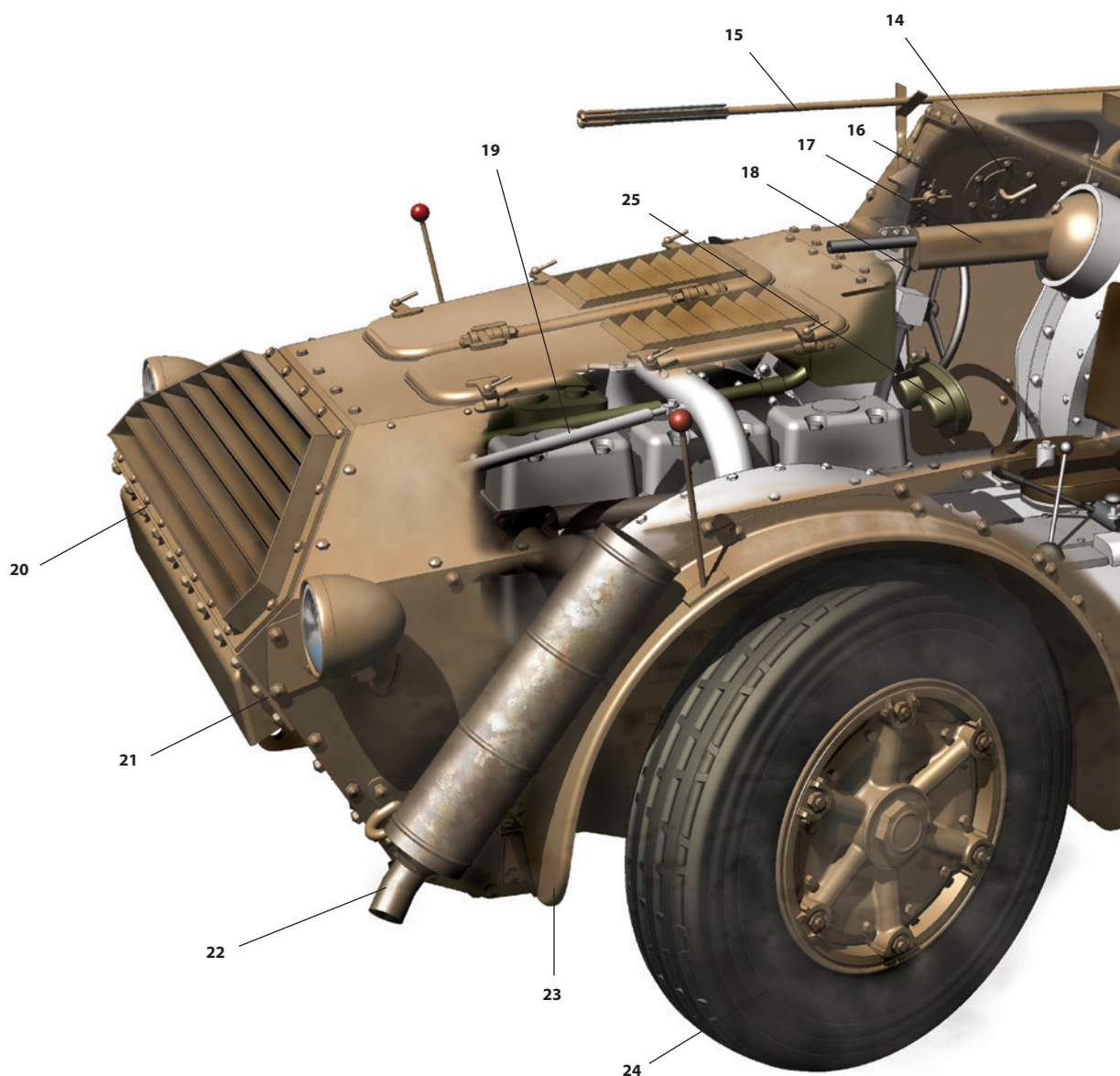
An VIII Bersaglieri AB 41 in the desert, 1942. Apart from the characteristic feathers of the Bersaglieri, the extensive use of camouflage netting is noticeable, employed to disguise the shape of the vehicle. (Cappellano)

A column of AB 41s approaching the Siwa oasis, 1942. It is worth noting that the vehicles in the foreground and background were field modified, racks being fitted to the nearside mudguard and hull aft to accommodate jerrycans. (Cappellano)



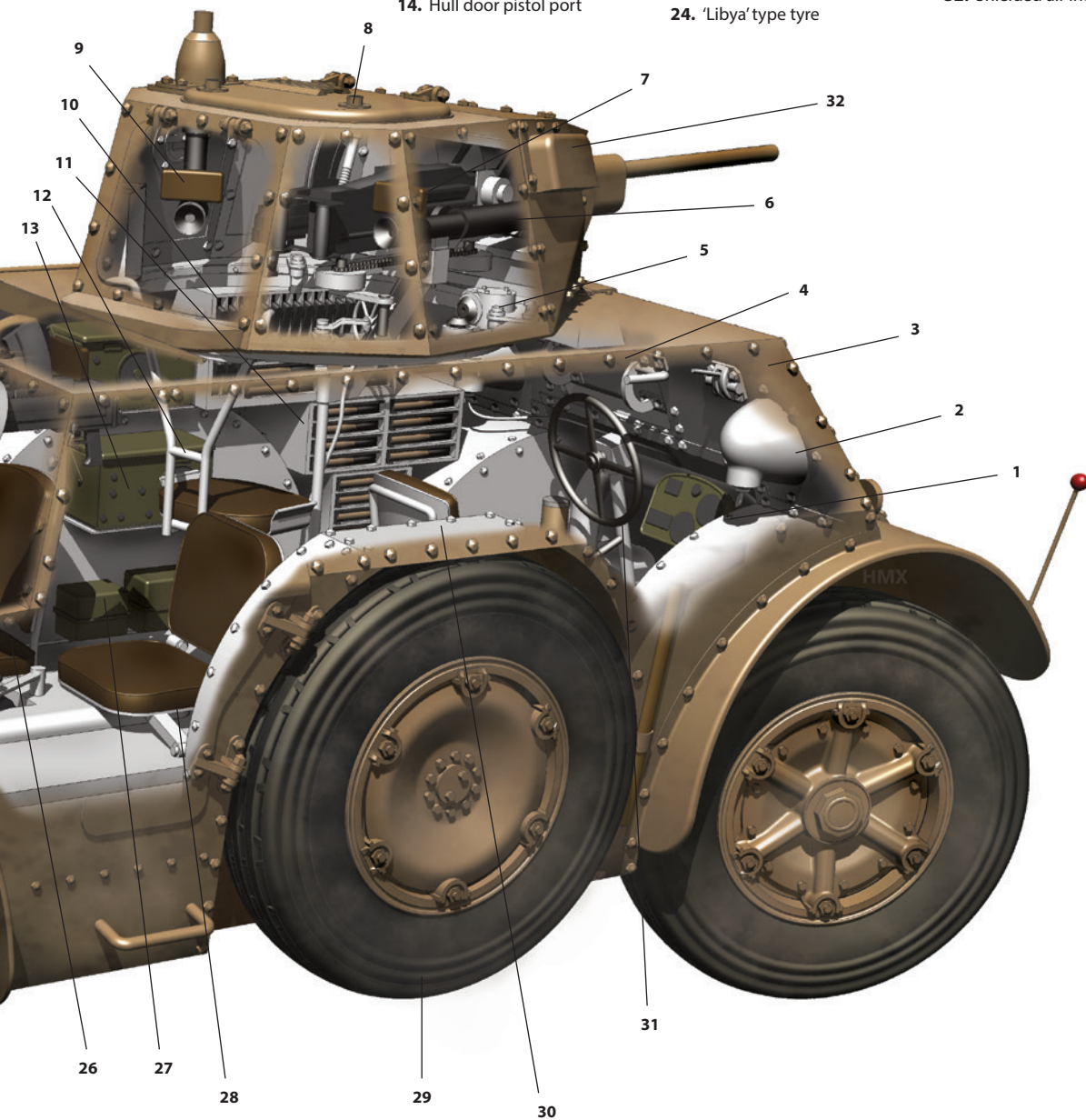
One of the complaints made about the AB 41 armoured car concerned its cramped fighting compartment, and the even more cramped turret. Access to the front driver seat required swinging the hinged back of the seat and, once seated, the driver found the steering wheel very close to his jaw. Only by opening the visor slot could a decent view be obtained. The commander/gunner had to secure himself with harnesses to his seat, the butt of the 20mm gun actually close to his chest. Escape from the turret was not easy, in spite of the large hatch, and he had to rotate the turret, aim the guns and replace ammunition clips while giving his orders to the crew at the

same time. The rear driver position, shifted to the nearside, also offered a reduced view while the machine gunner/radio operator had to fire from a cramped position while relying exclusively on the gunsight for external visual. Ammunition racks were made of wood, usually covered with tarpaulin, and were deemed both unstable and unsafe. Ammunition clips were held in position by a string, and in case of fire (very likely, given the amount of fuel carried) the wood would turn the inside into a trap. The first AB 40–41 had no radio apparatus installed, and this was only fitted to subsequent production batches.



KEY

- | | | | |
|-----------------------------------|--|----------------------------|----------------------------------|
| 1. Front driver instrument panel | 8. Turret hatch | 15. Foldable radio antenna | 25. Rear driver instrument panel |
| 2. Headlamp | 9. Commander/gunner periscope | 16. Halved door | 26. Rear driver seat |
| 3. Headlamp flap lever | 10. 8mm ammunition magazines for Breda 38 | 17. 8mm Breda 38 MG | 27. Radio batteries |
| 4. Front driver visor | 11. 20mm ammunition magazines for Breda 35 | 18. Rear driver wheel | 28. Machine gunner seat |
| 5. Hand turret traverse mechanism | 12. Commander/gunner seat | 19. SPA 6T engine | 29. Free-wheeling spare wheel |
| 6. Telescopic sight | 13. Radio (transmitter/receiver) | 20. Engine cowling | 30. Front driver seat |
| 7. 20mm Breda 35 gun | 14. Hull door pistol port | 21. Rear light | 31. Front driver wheel |
| | | 22. Exhaust silencer | 32. Shielded air intake |
| | | 23. Mudguard | |
| | | 24. 'Libya' type tyre | |



An AB 41 in Italy, summer 1943. The latest production batches of this vehicle were fitted with external racks for jerrycans on both hull sides, a measure intended to increase range but which also increased the danger of fire. (AUSSME)



series of shortcomings particularly in the North African theatre of operation. Changes introduced with the AB 41 version, mostly the 20mm-gun-armed turret, increased the weight from 6.85 to 7.4 tons and only reduced the height by 4cm. The more powerful engine retained the original characteristics of the AB 40, clearly conceived for European theatres of operations. It is worth noting that all of the AB armoured cars produced in 1941, and some of those produced in 1942, were officially named AB 40 regardless of the armament that, in fact, marked the difference between the AB 40 and the AB 41.

Both the main 20mm Breda 35 turret-mounted gun with an 8mm Breda 38 coaxial machine gun, and the 8mm Breda 38 in the aft hull were hand operated, their ammunition supplied with plate chargers (eight 20mm rounds) or magazines (24 rounds) stowed in wooden racks on both sides of the inside hull. Feeding ammunition plates or magazines during combat was not easy, and the flimsy construction of the wooden racks made them particularly dangerous in the event of fire. This was the danger most feared by crews, given the large amount of fuel stored in the three fuel tanks with a total capacity of 118 litres of petrol. The main 60-litre fuel tank was positioned behind the fore driving seat, and the 60-litre auxiliary one in the front part of the hull.

The rear driver/gunner positions were cramped, and sighting was

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AB 41 IN NORTH AFRICA, 1942

The dual drive system, enabling the armoured car to move swiftly forwards and backwards without turning, was an Italian army concept clearly suggested by the idea that armoured cars would fight in narrow mountain roads or in urban areas. It did not take long to realise that armoured cars would be mainly used in North Africa, where the dual drive offered very little advantage. The removal of the rear driver position and of the rear machine gun, itself hardly of much use in North Africa, led to the improved AB 42 version of the AB 41 that never entered production. There was in fact one use for the dual drive system in North Africa; the armoured car could move towards enemy fire facing it, with an engine that, although vulnerable itself, at least offered better protection than the 8mm frontal armour plates in case of a direct hit. The vehicle could be lost, but the crew had better chances of surviving. The scene shows an AB 41 advancing under cover of a 20mm Breda 35 anti-aircraft gun. In spring 1942 the III 'Nizza' group's armoured cars sported large national flags on both sides and often on the front as well, for instant recognition.



H00X



A column of armoured lorries in Yugoslavia, 1942–43. These appear to be field modifications, with the driver and the main compartment protected with armoured shields, the latter clearly standard including firing slots. (Cappellano)

impaired by the position of the sighting telescope. In fact reduced dimensions and the large amount of equipment stowed inside made the armoured car particularly uncomfortable and even dangerous when driving on rugged terrain, because of the many sharp edges. Crews had to wear crash helmets to avoid injuries.

Overall fitting of the armour plates was bad, and sometimes there could be gaps between the plates. Steel was usually not hardened. Turret traverse was also hand operated, the handwheel having to be rotated

by the commander/gunner 95 times for a 360 degree rotation. The 9mm-thick gun mantlet had no splash protection and, in spite of the periscopes mounted, a clear view could only be obtained (particularly by the drivers) by keeping the visors (fore and aft hull) open. The rear driver, with the visor shifted close to the nearside, was greatly impaired. Near and offside halved access doors were suitable for the purpose, but the turret hatch turned out not to be suitable for escape, the commander having to struggle his way out through the Breda 20mm gun. The lack of instruments in the rear driver position greatly reduced speed and manoeuvrability. Above all, early samples (particularly those sent to North Africa in 1941) lacked radio apparatus, which greatly hampered the actual purpose of the vehicle for reconnaissance. Only from 1942 was the standard RF 3 M radio apparatus mounted, along with a foldable eight-rod spider web antenna (sometimes fitted to vehicles lacking radio apparatus).



An AB 41, probably of the III 'Nizza' group, in North Africa. The vehicle, overall sand and sporting the tactical symbol of the first vehicle of the first platoon, carries a rack on the hull aft and a German jerrycan. (Cappellano)

AB 41 developments: the AB 43

It did not take long before the shortcomings of a vehicle conceived for European theatres of operations came to light in North Africa. The AB 41 was too heavy and underpowered, even in spite of the new engine, lacking sufficient speed and manoeuvrability in the desert even though it had been shown to possess good qualities when tested in Italy. Agile, fast, manoeuvrable and stable on road, the standard 'Artiglio' (claw) tyres and the brakes proving their worth, the AB 40–41 proved to be extremely demanding off road, all too often unable to reach full speed.

The standard 'Artiglio' tyres being unsuitable, a new desert type was introduced. Armour protection was only sufficient when facing infantry fire, particularly in 1942. Weapons were suitable for short ranges, about 500m, their theoretical range spanning from 400 to 800m. The idea was for the armoured car to maintain its movement, halting to fire only when dealing with infantry or soft targets, or whenever necessary. The AB 40–41 also proved particularly vulnerable to mines.

In 1942 the army staff asked for a series of modifications to be introduced, in order to reduce weight. Most notably the rear driver position, and the aft machine guns, had to be removed, while the horsepower had to be increased. This version was known as 'autoblindo alleggerita mod. 42' (light armoured car model 42), and barely came into production; following the defeat at El Alamein it was no longer deemed a priority. The prototype featured a slender hull; near and offside doors were moved forward and spare wheels were shifted to the rear of the hull.

Nevertheless, a new version was developed retaining the new ABM 3, a more powerful 110hp engine that increased both speed (81.2km/h) and range (eight hours, or 460km instead of the AB 40–41's 400km). The new AB 43 model was to retain the double drive capacity (and the aft machine gun, in theory deemed no longer necessary and therefore to be removed) of the AB 41, using the same hull. The turret was redesigned, with a lower profile. The standard 20mm new model also re-introduced the anti-aircraft machine gun mount on the turret.

A second version of the AB 43 was to have a larger turret fitted to the modified hull of the anti-tank version, being armed with a 47/40 gun and an 8mm coaxial machine gun. The first version of the new armoured car entered production with the new designation of AB 43 (its most peculiar innovation was the racks for jerrycans on the outside hull, also fitted from 1942 to the AB 41); the second one never went beyond the prototype stage.

The prototype of the 47/32 gun-armed AB 43, its hull matching that of the self-propelled 47/32 gun-armed prototype. This turret gun-armed vehicle was employed by the 90th Panzergrenadier Division on the Italian front. (AUSSME)



A fully restored AB 43 on display, showing the halved hull access door opened. The upper portion had a firing slot, and in the desert it was usually kept open to let some air in. The AB 41–43 had no hull ventilation system. (Cappellano)



The AB 43 was an improvement on the AB 41 with minimal modifications: increased length (5.4m for the AB 43 instead of 5.2m), about the same width (1.9m), and increased height (2.48m instead of the AB 41's 2.34m). Weight also increased from 7.4 to 7.8 tons, however, it stowed less ammunition: the AB 41 had a total of 456 20mm and 1,992 8mm rounds, the AB 43 respectively 408 and 1,704. The new turret incorporated a modified access hatch, halved and opening to the sides instead of forward, and visor slots were removed. Smoke candle dischargers were also added to the rear hull.

A further 72 AB 41s were produced up to July 1943, for a total of 624 samples out of the 644 commissioned by the army. The army commissioned 360 AB 43s, the vehicle no longer deemed suitable following the loss of North Africa. Lighter armoured cars were required for European theatres of operations. Production had to start in September 1943, not a single vehicle being produced before the Italian surrender.

Of the AB 40–41 versions, only two went beyond the prototype stage: the railway version and the 'Sahariana'. The railway AB 40–41 only had a few modifications introduced, most notably interchangeable road/rail compatible wheels and a steering system blockage. Other details included fore and aft sand dispensing systems, signal lights and flags, and a large rotating light on top of the turret. There were railway versions with the AB 40, 41 and 43 models.

Neither the command nor the anti-tank versions entered production. The command version had the turret removed, and the top hull modified with extra armour plating to increase height. The roof was protected with an armoured plate, and contained a large hatch.

An AB 43 preserved at the Cecchignola army museum, Rome. The vehicle has been repainted in the 1943 standard three-tone camouflage. (Cappellano)



Inside the main compartment the command version had six foldable seats and large map tables. The anti-tank version, mounting a 47/32 standard anti-tank gun with armoured shield, also had the turret removed and the hull front and sides changed. A new casemate was built on the standard chassis, with almost vertical armour plates. It is worth noting that the modified hull was to be adopted with the 47/32mm-gun-armed turret of the AB 43, but it too never went beyond the prototype stage.

AB 41–43 developments: the ‘Sahariana’

At the end of 1941 the exploits of the Long Range Desert Group (LRDG) became a real matter of concern for the Italians. Along with the Free French forces, between December 1940 and January 1941 they had raided the Libyan Sahara – the Fezzan – hitting the garrisons of Murzuk and Tragen. The Italians counter-attacked on 31 January 1941 when a ‘colonna mobile’ (mobile column) with FIAT 634 lorries from the Kufra garrison located and attacked the LRDG patrol. The LRDG lost 11 vehicles, the Italians one. However, in February 1941 the Free French seized the Kufra oasis, later to be used as an advanced base by the LRDG.

Suitable, desert-going vehicles were clearly required and the LRDG ones impressed the Italian army staff, which belatedly realised it did not have at its disposal a single vehicle suitable for long range missions, particularly in the desert. The development of an equivalent vehicle was therefore requested by the Italian general staff in late 1941, when mass production of the AB 41 armoured car had already started. In the meantime the Italian army also developed new elite, special units. In May 1942 the first ‘Arditi’ (literally ‘daring’, the name used for the Italian special forces and assault troops roughly equivalent to the British Commandos) battalion was formed, followed in July by a second one. On 15 September 1942 the two battalions formed the 10th ‘Reggimento Arditi’ (Arditi regiment), with a third battalion being raised in March 1943. Each one of the first two ‘Arditi’ battalions was made up of three companies; paratroopers, swimmers and jeep mounted (‘Arditi camionettisti’). The development of long range vehicles was clearly intended for them.

Based on the chassis of the AB 41 armoured car, the ‘Sahariana’ only retained the aft, engine section of the armoured car without major modifications. Hull sides and front were redesigned, with a lower profile than the engine section gradually getting lower on both sides, and on the front. No armoured plate was used, all plates being vertical on the sides and ‘U’ shaped in front also to accommodate the single spare wheel. The driver retained the central, front position and two folding seats were fitted on the offside of the crew compartment, one on the back nearside. A large, foldable windshield in the

Two ‘Saharianas’ in the Libyan desert, late 1942. Most likely from the ‘Raggruppamento Sahariano’, they show the different armament used: a 20mm anti-aircraft gun in the foreground, a 47/32 anti-tank gun in the background. (AUSSME)



front offered the only protection. At the centre of the crew compartment a large mount for guns was fitted.

The 'Camionetta Desertica mod. 42' (desert jeep model 1942), or 'Sahariana', proved to be a quite efficient and valuable multi-purpose vehicle, in its own way better than the standard AB 41 and 43 armoured cars. The crew typically consisted of a driver and three 'Arditi' special forces, though it could be increased or reduced according to needs. With a dry weight of 4.5 tons and a battle weight of 6 tons, the 'Sahariana' retained the same transmission and independent suspension of the armoured car with much less weight. The 110hp engine, the same used to improve the AB 41, guaranteed a power/weight ratio of 16.6hp per ton and a maximum road speed of 84km/h. Fitted with the 'Railflex' tyres, the 'Sahariana' retained the stability, speed and manoeuvrability of the armoured car being unhampered by its weight and lack of sight.

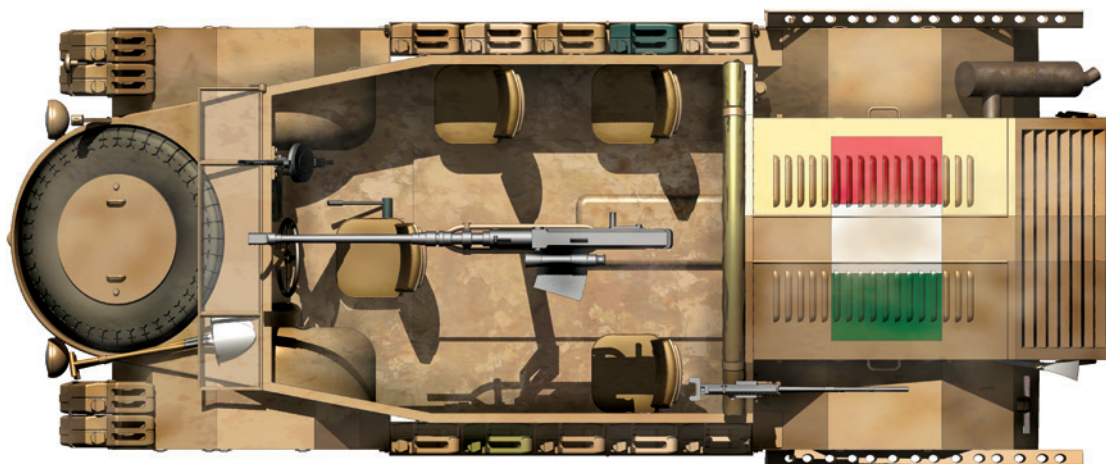
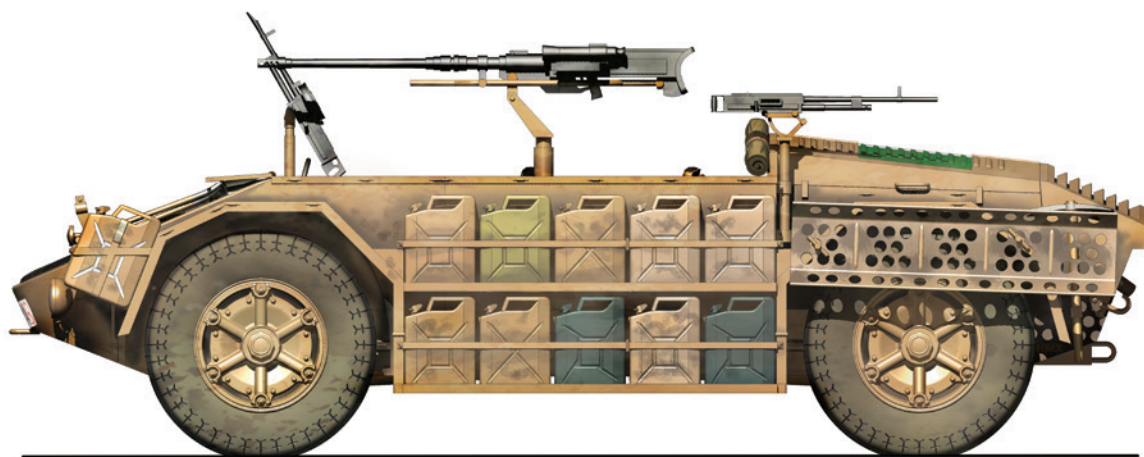
Above all the 'Sahariana' was conceived for long range operations, carrying on both sides outside the crew compartment two large racks usually accommodating ten 20-litre jerrycans on each side (the Italian ones were similar to those in use with the German forces), with four more accommodated on the front mudguards. Two small tool boxes were mounted on the rear fenders, although these were not always present. Also fixed to the rear fenders were two steel channels for sand. The new version of the 'Sahariana', the 'Camionetta II SPA ABM 42', mostly used in European theatres of operations and therefore known as 'metropolitana' (metropolitan), did in fact replace two of the jerrycan racks on the top sides with two large metal tool boxes, used for ammunition and other items. Each 'Sahariana' also had special compartments housing an iron box for foodstuff, a wooden one for spare items, and a spare parts box along with two 10-litre thermos jugs, starter crank, fire extinguisher, tow rope, fuel siphon, ammunition boxes, and tyre inner tubes. Thanks to the external jerrycans the 'Sahariana' could reach up to 1,400km in range; 720km with standard fuel tanks, plus 680km with at least 17 extra 20-litre cans (the others carrying water).

In 1942 a first order for 140 'Sahariana' was placed, reduced in May 1943 to 80 samples based on the AB 41–42 chassis, plus another 20 on the AB 43 chassis. The actual production is not known, although it can be assumed that 100 AB 41–43 chassis were converted for this purpose. The first sample was delivered on 28 August 1942. The 'Sahariana' could accommodate a variety of weapons, and all too often did. The central gun mount was used for a standard 47/32 gun mount, a 20mm anti-aircraft Breda 35, or a 20mm Solothurn anti-tank rifle. Gun mounts for the 8mm Breda 38 machine guns

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AB 42 'SAHARIANA'; NORTH AFRICA 1942

Versatility was the main feature of the scout car 'Sahariana'. The side racks could accommodate up to 20 jerrycans on each side, thus adding some 800 litres of fuel. The standard number of fuel jerrycans was 17, to increase the range from 720km to 1,400km. Three other jerrycans, along with the four carried in the racks mounted on the front mudguards, were used for water for the driver and the three crew. The central gun mount was used for three different types of armament: the standard 20mm Solothurn anti-tank rifle, the 20mm Breda 35 gun or, the rarest one, the 47/32 anti-tank gun. Gun mounts on both rear sides of the main compartment, and to the fore offside, normally accommodated the 8mm Breda 38 machine gun but other machine guns, particularly captured ones, were used too. Here the crew used a captured Vickers probably taken from a Long Range Desert Group vehicle. The European version of the 'Sahariana' replaced the top side racks with large metal boxes, long range being no longer important.





Three 'Saharianas' from the 'Raggruppamento Sahariano' in the Libyan desert, 1942. The photo must have been taken after the 25 November clash with Long Range Desert Group vehicles, for the vehicle in the foreground sports a Vickers MG. (Cappellano)

were fixed on the front offside near the driver's seat, and on both sides of the rear crew compartment. It was not unusual for crews to make field modifications, either introducing another machine gun mount or replacing the Breda 38 with other machine guns, especially captured ones.

The Italian command of the Libyan Sahara was greatly impressed by the LRDG's achievements too, and in May 1942 properly evaluated the need for an adequate desert-going vehicle for use, both to patrol the vast areas of desert dividing the Italian garrisons, and to create units to harass the enemy supply lines and airfields in the area spanning from Chad to the Sudan. That same month permission to create small, motorized raiding parties was requested of the Italian general staff, which granted it on 10 July 1942. Lack of suitable vehicles delayed matters until 30 September 1942 with the creation of the first 'Pattuglia Vigilanza Terrestre Avanzata' (advanced land surveillance patrol), which was attached to the 5th 'Sahariana' company at Sebha. On 8 October 1942 a second patrol was formed and attached to the 3rd 'Sahariana' company, which had also attached one of the three existing 'Squadra Pilotaggio Zone Desertiche' (desert areas piloting squad). The third and fourth surveillance patrols were formed on 15 October 1942, being attached to the 2nd 'Sahariana' company at Zella.

The 'compagnia Sahariana' (Sahara company) was in fact a mobile unit 143 strong (mostly Libyan soldiers, 133), with a rifle- and machine gun-platoon, and 20mm and 47/32 gun platoons. Equipment included 14 AS 37 light lorries and 20 Lancia RO gun-carrying heavy trucks. The AS 37 was developed from the TL 37 gun tractor and, at the beginning, only used as a light troops transport extremely suitable for the desert given its speed and manoeuvrability, but lacking sufficient payload and with an excessive height. The 'Sahariana' offered in comparison a lower profile and greater payload, as well as increasing range.

About the same time an improvement of the AS 37, the AS 43 or 'camionetta 43' (AS stands for 'autocarro sahariano', or Sahara lorry; 'camionetta' translates as jeep), was being developed. This lorry, specifically intended for use in the desert, was produced from 1943 but arrived too late to be sent to North Africa. It weighed 3.5 tons, could carry 1.5 tons of weight and had a maximum speed of 80km/h, a 1,000km range, and a crew of five. Often armed with an 8mm Breda machine gun, it could also accommodate a 20mm anti-aircraft gun. It was employed in Italy in 1943.

Delivery of the first samples of the 'Sahariana' was delayed because the first production batch was destroyed during an air raid on Turin in November 1942. Eventually, on 21 September 1942 the first six 'Sahariana' were sent

to the 10th Arditi regiment at Brindisi to equip its 103rd 'compagnia camionettisti'. Two were armed with the 20mm Solothurn anti-tank rifle, the others mostly with the 20mm anti-aircraft Breda 35, in addition to the standard 8mm Breda 38 machine guns. The other 14 'Sahariana' were sent to Brindisi (three vehicles) and to Taranto (nine including two 47/32-gun-armed, two 20mm anti-aircraft, and one Solothurn anti-tank rifle-armed ones), while two others remained at the depot.

The first eight 'Sahariana' arrived in Libya on 8 November 1942, being assigned to the 3rd 'Sahariana' company at Zella. They were used to form the 'Reparto Formazione Camionette del Raggruppamento Sahariano' (experimental jeep unit of the Raggruppamento Sahariano), later to become the 'Reparto Celere 3' (fast unit 3) of the 'Raggruppamento Sahariano' following the arrival of another ten 'Sahariana' vehicles and of the 21 'Arditi' crews. The unit was sent to Hon for training, particularly for long range desert travels, with the aim of completing the training course by mid-December 1942. Needless to say training was never completed. However, the unit had its baptism of fire on 17 November 1942 when it clashed with an LRDG patrol, losing one of its 'Sahariana'. On 25 November another clash followed, but this time the Italians showed they had learned the lesson; the LRDG lost half of its eight vehicles, the Italians none.

Following the defeat at El Alamein the 'Raggruppamento Sahariano' withdrew to Tunisia where it formed the 'Raggruppamento Mannerini' and was joined by the 103rd 'Compagnia Arditi Camionettisti'. The company had an established strength that included 24 'Sahariana', plus eight lorries and two personnel cars for services and supplies. In fact only 19 'Sahariana' were available, and most of those were lost at sea in January 1943 when the 103rd company was sent to Tunisia. Only eight 'Sahariana' arrived, and since the unit could no longer be used in long range missions in the desert it was split and used for field reconnaissance.

One patrol was assigned to the 'Trieste' infantry division, the two others to the Italian XX Army Corps on the Mareth line. During the February 1943 battle for the Mareth line the 103rd company suffered severe losses, including its commander, and after being regrouped fought on the Wadi Akarit and Enfidaville lines until the surrender in May 1943. Some of the surviving 'Sahariana' either with the 'Raggruppamento Mannerini' or with the 103rd 'Compagnia Arditi Camionettisti' were attached to the 'Centauro' armoured division, and incorporated into the AB 41 armoured-car-equipped RECo 'Lodi'.

In April 1943 the 113th 'Compagnia Arditi Camionettisti' part of the II battalion of the 10th 'Arditi' regiment was sent to Sicily. Personnel arrived by air, its 20 'Sahariana' following by sea and arriving on 15 May 1943. Deployed near Catania the 113th company lost two 'Sahariana' during an air raid on 25 May. After the Allied landing in Sicily the 113th company joined



A column from an unidentified unit in Tunisia, early 1943. Not only the remnants of III 'Nizza' and VIII Bersaglieri battalions fought there, but also other armoured car units attached to the 'Centauro' division. (AUSSME)

the German paratroopers of the 1st Fallschirmjäger Division and fought at the Primosole bridge on 15 July, losing another four 'Sahariana'. After the battle the company was withdrawn from the front and sent back to mainland Italy.

Also in 1943 the 123rd 'Compagnia Arditi Camionettisti' of the III battalion of the 10th 'Arditi' regiment was sent to Sardinia, without its 'Sahariana'. Those were used instead to equip the newly formed 'Battaglione d'Assalto Motorizzato A' (motorized assault battalion A), directly subordinated to the general staff.

Field experiences with the 'Sahariana' revealed the effectiveness of the vehicle, which actually matched requirements. It was sturdy, reliable, fast, manoeuvrable, flexible and capable of carrying heavy payloads. The only inconveniences came from the AB 40–41 heritage: mechanical complexity, need for constant maintenance, and above all the high production costs that made it unsuitable for the Italian army.

Reconnaissance and armoured personnel carriers

Lack of interest in armoured reconnaissance and personnel carrier vehicles, inadequate technical resources and lack of funds saw the Italian army enter the war without any kind of reconnaissance or armoured personnel carrier vehicle. It did not take long before battlefield experience revealed them to be useful and even necessary, particularly in the North African theatre of war. The decisive push to the development of an Italian armoured personnel carrier and light reconnaissance vehicle was given by the British Vickers Universal Carrier, encountered in North Africa. This light tracked vehicle, capable of carrying a squad and a wide variety of armaments, stimulated the interest of the Italian army. Not always with good results.

There had been attempts to propose the development of an armoured personnel carrier, all unsuccessful. In 1937–38 the Ansaldo Mo. 36 tank, forerunner of the M 11/39 medium tank, provided the basis for the army to propose the development of an armoured personnel carrier. Open topped, the vehicle could carry six men plus the pilot but, given its height, the proposal was dismissed. The FIAT Cingoletta 2800 or CVP 4 ('carro veloce per personale', fast personnel tank, 4 tons), also known as 'cingoletta



A motorised infantry column in Yugoslavia, led by an 'Autoprotetto SPA S 37'. Intended for use as an armoured personnel carrier with the armoured division, it was mostly used as a scout car in the Balkans, particularly Yugoslavia. (Cappellano)

FIAT 42', was a homemade copy of the Universal Carrier with a 66–80hp engine developed from the one in use with the Lancia 'Astura' sports car. It had a theoretical road speed of some 60km/h. Like the Universal Carrier it was armed with an 8mm Breda 38 in a forward casemate.

A similar vehicle was developed from the chassis of the L 6/40 light tank. With an 88hp engine and 5.5 tons of weight, the Ansaldo CVP 5 or L 40 only reached 50km/h

on road but was better armed than the CVP 4; it included a 13.2mm machine gun in a forward casemate, and an 8mm Breda machine gun on an anti-aircraft mount. Both prototypes being expensive and difficult to produce, they never entered production and in the summer of 1942 their development was eventually halted.

In spite of the widespread use made by other armies of tracked or half-tracked armoured personnel vehicles, or light reconnaissance ones like the Universal Carrier, the Italian army decided instead to adopt wheeled armoured personnel carriers based on the chassis of reliable trucks. Derived from the chassis of the SPA TL 37 artillery tractor also used for the development of the AS 37 'Sahariano' light truck, the 'Autoprotetto' SPA S 37 (armoured car) was the first armoured personnel vehicle to be adopted by the Italian army.

The request for its development was made on 20 January 1941 by the deputy chief of general staff, the first prototype being ready in May and used for tests and trials. Production started at the end of the year; the Autoprotetto SPA S 37 was officially adopted by the army on 4 February 1942 and 200 samples were commissioned. The Autoprotetto had a series of 8.5mm (6mm floor) bolted and riveted armoured plates mounted to protect the engine and the crew compartment, with a roof for the driver compartment only. Overall weight was 5.55 tons, the Autoprotetto having one driver and accommodating eight men in the main compartment. Access was secured through a rear, two-piece halved door. This small vehicle, 4.95m long, 1.92m wide and 2.13m high, was equipped with an 18 VT-3 engine with 67hp at 2,500rpm, and independent suspensions. Maximum speed on the road was 52km/h and range 300km, and it could drive on a 40 per cent maximum gradient. Armament included a single 8mm Breda 38 mounted on a rail linking the near and offside.

Field modifications were widespread. Foldable shields, up to five, were fitted on both sides and fore to protect the crew and enable them to fire from the inside. A flamethrower variant, also fitted with shields, was made. The armoured divisions required delivery of 90 Autoprotettos, including 17 command ones fitted with the RF 3 M or RF 1 CA radio sets. They were intended for use with the divisional field command (eight vehicles), with one of the Bersaglieri battalions (30 vehicles), with the divisional anti-tank battalion (12), with the artillery regiment (24 vehicles), and with the sappers (ten vehicles), plus ten vehicles were intended for use with the divisional reconnaissance unit.



The basic version of the FIAT Autoprotetto 665 NM, showing that only the upper portion of sides and rear (note the firing slots) along with the driver cabin were armoured. Later versions were fully armoured. (Cappellano)



The fully armoured version of the Autoprotetto, also used on different vehicles. Clearly noticeable are the shielded 8mm machine gun and the firing slots, used for the standard rifles (right and left) or light machine guns (centre). (Cappellano)

SPA S 37 were delivered, the remaining order having been cancelled. It was employed along with the new 'autocarro blindato' (armoured truck) in the Balkans for security and anti-partisan duties.

In summer 1941 an experimental prototype of the Autoprotetto SPA S 37 was developed, mounting a 20mm Breda 35 with a coaxial 8mm Breda 38 machine gun in an open-topped half turret fitted in the main crew compartment, also protected by a roll bar. The sides were modified adding two halved access doors, the aft being modified as well. The single prototype of the autoblinda TL 37 was sent to North Africa for evaluation, and was lost in December 1941 at Bir el Gobi. Subsequently the project was abandoned.

Waiting for the development of a suitable half-tracked vehicle, the Italian army used its most common stopgap solution: armoured trucks. Field modifications had been largely employed in Italian East Africa, with armoured shields used to protect the crew of some trucks and also having weapons mounted. In the summer of 1942 the Italian army staff decided



A line up of 'Lince' scout cars at the factory. The 'Lince', copied from the British 'Dingo', was quite successful and much appreciated, particularly by the Germans who made extensive use of it. (AUSSME)

to develop a standard vehicle, based on the 9-ton, 4x4 heavy truck FIAT 665 NM. Construction was extremely simple; bolted and riveted armoured plates were fitted to the driver compartment, protected all round, and to the top and rear of the main body of the truck. Thickness varied from 7.5mm on the front and 5mm on the sides of the driver compartment, to the 4.5mm of the main body. The first samples only had armoured plates on top of the main body, but it was subsequently entirely armoured.

Visor slots were added to the front of the driver compartment, along with two firing slots on each side door. The armoured plates on both the near and offside had eight protected firing slots, and three more were in the rear armour plate. That enabled the crew of 20 (plus two in the driver compartment) to fire their weapons from inside the vehicle, while machine guns or other weapons could be fitted to extra mounts. The first 44 samples were produced by May 1942, for a total of 90 at the end of the year and 110 to the end of May 1943. A new version of the FIAT 665 NM Blindato (armoured FIAT 665 NM) was studied from April 1943, while the prototype of the armoured version of the popular 'Autocarro Dovunque 35' (translated as 'everywhere' truck mod. 35) was still being developed.

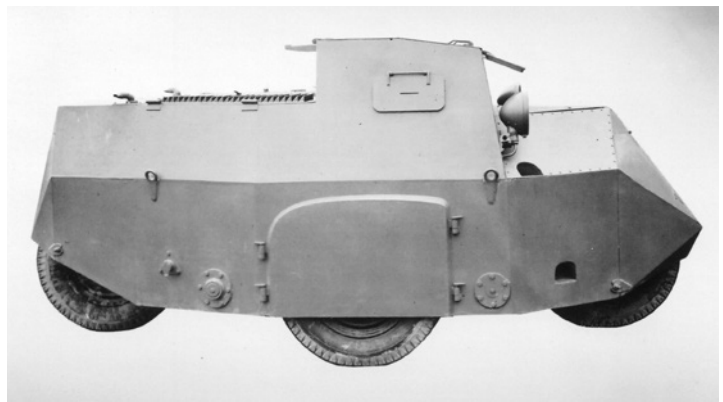
Like the Autoprotetto SPA S 37, the FIAT 665 NM Blindato was meant for use by armoured units. In January 1943 the Italian army staff decided to use them to equip four Bersaglieri battalions for two armoured divisions, but since only one armoured division fighting in Tunisia was now left (the new one only to be formed in May), the plan was dropped and the vehicle was used instead along with the SPA S 37 in the Balkans.

Interestingly, the Italian automotive industry proved to be extremely appreciative of British light armoured vehicles and, as well as trying to manufacture a domestically produced copy of the Universal Carrier, a copy of the Daimler Dingo Scout Car was developed. After studying some captured Dingos in summer 1941, the Italian army staff demonstrated its interest and sent one of those vehicles to the Lancia factory at Turin, asking the factory to develop an 'imitation' of it. Attempts to produce a new vehicle instead of carbon copies would only show the existing gap between vehicle manufacturers and army requirements. This reached its peak with the Caproni-Lancia 'Autovettura Blindata Vespa'



The only 'Dovunque 33 blindato' produced, the armoured personnel carrier version of the 'Dovunque 33' (everywhere) lorry. It was used by a Blackshirt brigade in 1944-45, and is now preserved in a private museum. (Cappellano)

The prototype of the 'Vespa' CETEM armoured car, a small armoured vehicle intended to be armed with a single machine gun. The unusual disposition of wheels made it unsuitable for off-road movement. (Cappellano)





A preserved sample of the 'Lince' scout car on display. Intended to replace the AB 40-41 as an armoured car in the European theatre of operation, it was exclusively used by the Germans. (Cappellano)

An Autoprotetto armoured lorry in Yugoslavia, apparently used either as a command vehicle or to drive around some generals on an inspection trip. The lorry is armed with a shielded 8mm Breda 38 machine gun. (AUSSME)



(armoured car wasp). Based on the chassis of a four-wheeled car developed in the 1930s, with wheels arranged in a diamond shape (one fore, one aft, one each side), the lightly armoured vehicle was small and manoeuvrable but lacked power and speed, particularly off road. It was abandoned in 1942 in favour of the 'Lince' (lynx) armoured car.

A further delay to the development of a copy of the Dingo was caused by the idea that the 'Lince' could become an amphibious vehicle, although this was soon abandoned. Eventually on 29 March 1943 the Italian version of

the Dingo, the 'Lince', was accepted by the Italian army, which commissioned 300 samples. The idea was to use them for both reconnaissance and raiding actions, not just as a command and liaison vehicle like the Dingo, eventually forming squadrons of 31 cars to be incorporated into the RECo. The Italian surrender came well before that plan turned into reality.

An almost exact copy of the Dingo, the 'Lince' mounted a 60hp V8 engine from the Lancia 'Astura' sports car, giving the vehicle a 4x4 capability with independent suspensions, four-wheel steering, and high-speed reverse. This vehicle had a crew of two, an overall weight of 3.14 tons, 30mm frontal vertical armour, 12mm-thick side armour, 5mm top and 4mm floor armour, and a maximum speed on road of 86km/h and a range of 300-350km. Fitted with a sliding armoured top, the prototype lacked any weapons but the final version was to incorporate an 8mm Breda 38 machine gun in a fore ball mount, every fifth car also having an RF 2 CA radio fitted. Production, meant to start in June-July 1943, was delayed by the bombing of the Lancia plants and could not start until after the Italian surrender.

Albeit intended for use with armoured divisions and particularly in North Africa, the few armoured personnel carriers developed and actually produced eventually ended up being employed against the partisans in the Balkans, where impromptu field solutions had been used already, such as fitting trucks with armoured plates.

In the autumn of 1942 the Italian 2nd Army in Yugoslavia formed the 'autosezioni autoprotetti' (armoured personnel cars sections), each with an established strength of 22 vehicles partly equipped with the RF 3 M radio apparatus and partly with shielded weapons, mostly automatic rifles and flamethrowers. The 998th 'autosezione autocarri' fought in Montenegro with the XIV Army Corps, the 1034th 'autosezione', with 24 SPA S 37, fought in Albania with

the 9th Army. In May 1943 the 370th 'autoreparto autocarri protetti S 37' was sent to Yugoslavia, with three sections: 1651st, 1652nd and 1653rd. It was followed by the 270th 'reparto autocarri protetti', formed in February 1943 and sent to Yugoslavia, equipped with the FIAT 665 NM Blindato. In May 1943 the 28th 'autoreparto' (truck park) stationed in Bari had its own 1650th 'sezione autoprotetti' equipped with SPA S 37s.

POST-SURRENDER USE

In the summer of 1943 the Italian army had a relatively large number of armoured cars and armoured personnel carriers, certainly more than it had in 1940. Apart from those in depots and training establishments, the armoured car-equipped units included the IV 'Nizza' group in the Balkans and the V 'Nizza' group, each with 36 AB 40–41 armoured cars, the RECo 'Lancieri di Milano' with eight AB 40–41 armoured cars, and the 'Nucleo Esplorante Corazzato' (armoured reconnaissance group) of the 9th 'Pasubio' infantry division (nine AB 40–41s, in the Naples area), of the 30th 'Sabauda' division (eight AB 40–41s, in Sardinia), and of the 28th 'Aosta' division in southern Italy.

The main concentration was in Rome, where the RECo 'Lancieri di Montebello' of the new 'Ariete' armoured division had 34 AB 40–41 armoured cars, while the 'Sahariana' left behind were used to equip the 'Battaglione d'Assalto Motorizzato A' (motorized assault battalion A) directly subordinated to the army staff. Made up of an HQ platoon with three 'Sahariana' and three platoons, each with six 'Sahariana', the 'Battaglione d'Assalto Motorizzato A' possessed in fact 21 model 1942 'Sahariana' with a mixture of armaments: 31 8mm Breda 37 machine guns, ten 20mm Breda anti-aircraft guns and six 47/32 anti-tank guns. The battalion also had 11 AS 37 'Sahariana' lorries.

A few AB 40–41 armoured cars were destroyed in Rome during the fighting near the San Paolo gate on 9–10 September 1943 against the paratroopers of the 2nd Fallschirmjäger Division; the actual number of vehicles lost by the 'Ariete' division that fought north of Rome against the 3rd Panzergrenadier Division is unknown. Certainly the Germans captured a large amount of armoured cars and armoured personnel carriers, and decided to produce a whole series of vehicles including the AB 43 armoured car and the 'Lince'.

The basic idea was to collect all the captured Italian vehicles and use them to equip units both in Italy and in the Balkans. Most of the captured AFVs, some of which had been sabotaged or rendered unserviceable, were delivered to a central park that allotted them to various units. The official figures reveal a total of 37 Autoprotetto SPA S 37s, the single 'Lince' armoured car prototype,

An AB 41 'ferroviaria' kept in use in the post-war period and with some modifications; note the anti-aircraft turret gun mount, the extra boxes added on the hull aft, and the new exhaust. It is in overall olive green, sporting the national flag and the standard 'EI' (Esercito Italiano) plate. (Cappellano)



87 AB 40–41 armoured cars, two Lancia 1 ZMs, and dozens of FIAT 665 NM 'Protetto' trucks seized. The actual number of vehicles seized was probably higher, some units acting on the basic 'finders keepers' rule.

The 2nd Fallschirmjäger Division seized six 'Sahariana' in Rome after the Italian surrender. Those are known to have followed the division, with Italian crews from the 10th Arditi, to the Eastern Front at the end of 1943. Some are supposed to have seen action on the Western Front as well, particularly during the 1944 Ardennes offensive. A dozen other 'Sahariana' were taken over in Rome by the Polizia dell'Africa Italiana (PAI), now acting as the main police force in occupied Rome.

The 44th Infanterie Division captured in northern Italy one Autoprotetto and 13 AB 41 armoured cars, being subsequently supplied with six 'Lince' armoured cars. The 71st Infanterie Division captured one S 37 Autoprotetto and one AB 41 armoured car, being likewise supplied in the months to follow with eight 'Linces'. In October 1943 the 65th Infanterie Division had ten AB 41 armoured cars, and was subsequently supplied with two AB 43 armoured cars and six 'Linces'. At the end of 1943 the German commands estimated an overall need for 134 AB 40–41 armoured cars, in fact more than the actual availability and production since late 1943.

Three Italian armoured cars were produced under German control in 1943–45; most notably the 'Lince', with 100 samples produced in 1944 and 29 in 1945; the AB 41, with 23 samples produced in 1943; then the AB 43, with 60 samples produced in 1944, and 42 more in 1945. A few modifications were introduced; almost all the available FIAT 665 NM lorries were captured in Yugoslavia and pressed into German service, some having extra armour plates added and some others having an armoured roof added to the main body. In late 1944 the Germans required the Breda 38 to be produced for

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1: AB 41 ARMoured CAR, BALKANS 1942

Reorganised about the same time as III group, the IV 'Nizza' cavalry armoured car group was employed in the Balkans, particularly in Albania and Yugoslavia, mostly for the protection of road convoys. The IV group was mixed, with its first squadron being equipped with L 6/40 light tanks, and only its second squadron had the AB 41 armoured cars. The AB 41 employed in the Balkans added a green or green/reddish-brown camouflage to the standard sand basic colour. Some of the AB 41s of the IV 'Nizza' were field modified, with the addition on the rear turret of a basket for extra stowage. The fully extended radio antenna was 7m long.

2: AB 42 'SAHARIANA' SCOUT CAR, SAHARA 1942

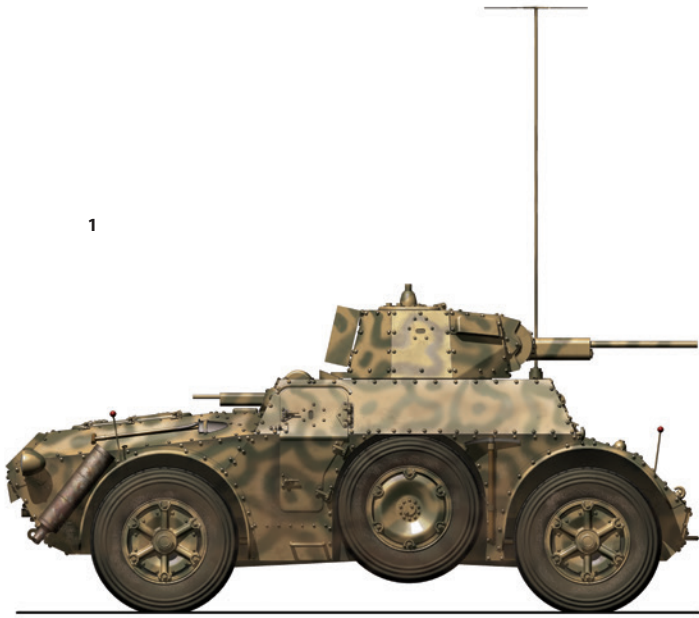
The only vehicle built for the Italian army specifically intended for use as a raiding vehicle to hit behind enemy lines. The AB 42 'Sahariana' only retained the engine and aft portion of the AB 41 fitted with the improved 110hp engine, and the suspension system as well. In contrast to the AB 41, the 'Sahariana' only had the two fore steering wheels (not four) and eliminated the unnecessary dual drive system. In addition to the driver there was a crew of three, foldable seats being provided, even though it could carry more crew if necessary. The Italians produced their own jerrycans, similar to the German ones. Those carrying fuel were stowed on the side racks, while those carrying water were on the front mudguard racks.

3: AUTOPRODETTO SPA S 37, BALKANS

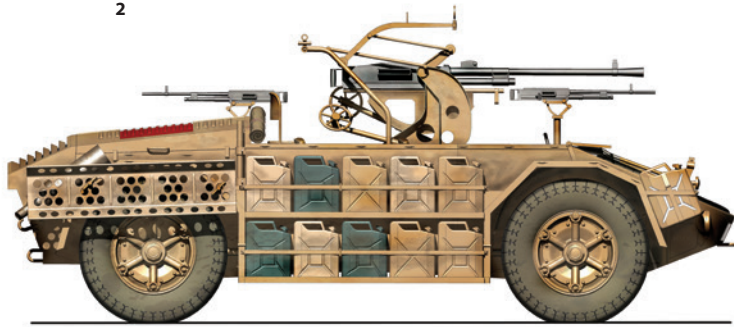
The Autoprotetto SPA S 37 was the only armoured personnel carrier used by the Italian army, along with the armoured FIAT 665 NM trucks. It was exclusively used in the Balkans, mostly in Yugoslavia, and employed with anti-partisan fighting units. The SPA S 37 added a green or green/reddish-brown camouflage to the basic sand too.

Detail: The unit using the white deer symbol is unknown; equally uncertain is the meaning of the coloured portions sometimes added to the top.

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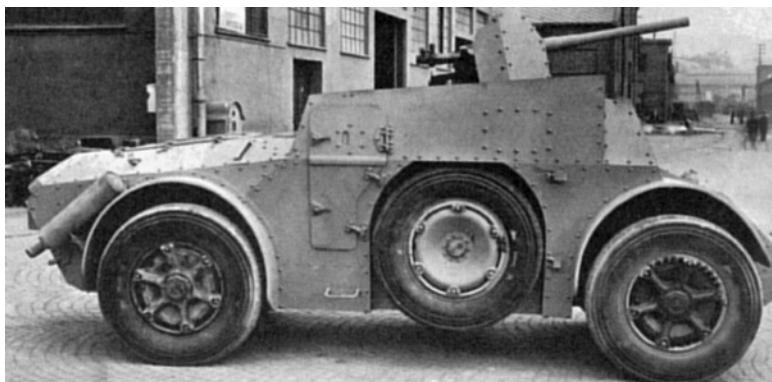


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The prototype of the 47/32 anti-tank gun version of the AB 42. The turret has been removed and the upper portion of the hull modified to accommodate the shielded anti-tank gun. (AUSSME)

use with the standard German 7.92mm ammunition instead of the Italian 8mm one. The 20mm guns also used German ammunition, even though conceived for more powerful guns.

The Panzer Späh Kompanie zbV 468 (armoured car reconnaissance company for special purposes) was formed in June 1944 with AB 43 armoured cars, some at least

having a field modification: an enlarged turret to accommodate two men. The small-sized turret was one of the few complaints made by the Germans about the Italian armoured cars, otherwise deemed modern and much more appreciated than the tracked vehicles. It is worth noting that, from autumn 1944, the Germans decided to give priority to the production of Italian armoured cars to the detriment of the otherwise obsolete tanks and self-propelled guns.

Other reasons for complaint included the need for constant maintenance due to the poor technical qualities of some components, the unreliability of Italian radio apparatus that was replaced with German equipment, and the problems arising from the AB 40–41 dual drive system. Otherwise vehicles like the ‘Lince’ were much appreciated, and saw widespread use.

In fact the Germans did not use the Italian armoured cars to equip single formations, as they did with the French captured vehicles, practically transforming them into second-rate units due to the obsolescence of the vehicles and the lack of spare parts. Italian armoured and reconnaissance cars were evenly distributed to almost every combat unit both in Italy and the Balkans instead. Units equipped with Italian armoured and reconnaissance cars in Italy included almost every army division; the 5th Gebirgs Division had nine AB 40–41 armoured cars and nine ‘Linces’, the 94th Infanterie Division six AB 40–41 armoured cars, the 114th Jäger Division seven AB 40–41 armoured cars and five ‘Linces’. The 278th Infanterie Division had nine AB 41 armoured cars and some ‘Linces’, the 305th Infanterie Division

five AB 40–41 armoured cars and one ‘Lince’, the 334th Infanterie Division nine AB armoured cars, the 356th Infanterie Division five AB armoured cars and two ‘Linces’, the 362nd Infanterie Division two then six AB armoured cars.

At the end of 1944 the 26th Panzer Division had two ‘Linces’, and the Panther-equipped 4th Panzer Regiment also had some ‘Lince’ reconnaissance cars. Likewise the Tiger-equipped ‘schwere Panzer Abteilung’ 504 and 508 each had two ‘Linces’. The Aufklärungs Abteilung 400, which in 1944 formed the MG Bataillon Kesselring 2, had four AB 41 armoured

An AB 40 ‘ferroviaria’ in Yugoslavia. These vehicles were used to control the railway lines, essential for supplies and troop movements, in an area largely controlled by Yugoslav partisans. (Cappellano)



cars at first, but when reorganised it possessed 16 AB 43s plus others, of type and number unknown. In the summer of 1944 German army headquarters in Italy were supplied with a total of two 'Linces' and 12 AB 43 armoured cars; headquarters in the Balkans were already using some 60 AB 40–41 ones.

The SS-Polizei Regiment 15 in Italy used some FIAT 665s and 'Linces', while the 13th Polizei Panzer Kompanie employed some AB 41s. The Polizei Regiment 'Bozen', formed in northern Italy, had one Lancia 1 ZM armoured car, one AB 41, and some FIAT 665 Autoprotetto. Between the end of 1944 and early 1945 deliveries of Italian armoured and reconnaissance cars continued; in January 1945 the 90th Panzergrenadier Division had 16 AB 43s, including the 47/32 turret gun-armed prototype. The 162nd Turkish Infanterie Division was supplied with six AB armoured cars and six 'Linces'. Last deliveries took place in April 1945; the 232nd Infanterie Division had two AB armoured cars and six 'Linces' as well, the 8th Gebirgs Division two AB 43s and six 'Linces', while the 42nd Jäger Division had some AB 43s and five 'Linces'.

Several Italian units fighting on the German side could rely on some armoured cars; the 'San Giusto' armoured group had eight Autoprotetto and two AB armoured cars, the tank battalion 'Leonessa' and the '9 settembre' (September) battalions respectively six and five AB 43s in February–March 1944. In early 1944 the Viberti factory developed the last wartime Italian armoured car. Based on the chassis of the AS 43 'camionetta' it had an armoured hull with bolted and riveted armour plates resembling that of the Autoprotetto SPA S 37. On top it had the turret of the L 6 light tank fitted, armed with a 20mm and an 8mm machine gun. The few samples produced were used by the 'Guardia nazionale repubblicana' police.

Some well-known German units used Italian armoured and reconnaissance cars. The 'Brandenburg' Division received six AB 41 armoured cars, the 4th Fallschirmjäger Division fought in Italy equipped with some AB 41s, AB 43s and 'Linces'. At the end of 1944 the 4th SS 'Polizei' Division had two AB 41s, while the 24th 'Kärstjäger' Brigade had some AB 41s and AB 43s. Armoured cars were also supplied to the Croatian divisions formed by the German army. The Panzer Nachrichten Regiment 2 fought in Hungary at the end of 1944 equipped with some Italian AB 40–41 armoured cars.

Several Italian AB armoured cars seized by Yugoslav partisans were employed after the Italian surrender. An AB 41-equipped platoon also fought with the Royal Italian Army on the Allied side in Italy, attached to the IX 'Reparto d'Assalto' (assault unit) of the 'Corpo Italiano di Liberazione' (Italian liberation corps). After the war the surviving armoured cars, mostly AB 41s and 43s, were not only used by the army (particularly the AB 40–41 'ferroviaria', used by the railway engineers) but also taken over by the Italian police, which employed them in public order and anti-riot duties. The dozen surviving 'Sahariana' were used after the war to equip the 'XX Reparto Mobile' (mobile unit) of the Italian police at Ancona.



An AB 41 belonging to the Savoia Cavalleria seen during a parade in 1990. The vehicle has been re-painted olive green and sports an army license plate, along with a few post-war modifications to the front hull. Notice the spade and axe on the hull side. (Cappellano)

An AB 41, most likely from IV 'Nizza' group, protecting a convoy in Slovenia in 1942–43. Unusually the AB 41 has no camouflage sprayed over the basic sand colour, suggesting it is a brand new vehicle recently delivered. (Cappellano)



CAMOUFLAGE AND MARKINGS

The first Ansaldo-Lancia 1 Zs produced were painted in an overall grey-green colour, the shades darkening with subsequent production batches. From 1917 all the Ansaldo-Lancia 1 Zs and ZMs sported a tricolour band all around the turret, matching the colours of the national flag (red, white and green from top to bottom). In some cases a yellow, smaller band was added on top and at the bottom. The standard grey-green camouflage was also used with the FIAT Terni-Tripoli, which also displayed around the turret the large band with the three national flag colours. After the war the Ansaldo-Lancia 1 Z and ZM had the turret bands repainted in grey-green, while the FIAT Terni-Tripoli employed in Libya replaced the band with a series of geometric symbols also all around the turret to mark the different squadrons and the units within the squadron. Those were usually red and white, the colours being inverted to mark the specific unit the armoured car belonged to.

At the end of World War I the Ansaldo-Lancia 1 Zs carried a white letter to denote their parent unit, and in 1928 and 1938 they adopted the same tactical symbols used by other armoured (that is tank) units. In 1928 this was

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AB 43, SLOVENIA, 1944

The AB 43 was the latest development of the AB 40–41 armoured cars that, deemed no longer useful for the European theatre of war, would only be produced in limited numbers from September 1943. Actual production did not start until after the Italian surrender, the Germans having 60 AB 43s produced in 1944 and another 42 in 1945. Those were used along with other captured armoured and scout cars by a wide variety of units both for reconnaissance and for liaison tasks, for example with the artillery regiments. Police units were amongst those employing the AB 43 armoured cars, mostly in Yugoslavia or in the border area of Slovenia between Yugoslavia and Italy. Those were employed in anti-partisan operations, providing much-needed armoured support to those otherwise poorly armed units. Italian armoured cars in German use mostly retained the 1943 standard three-tone Italian camouflage, sand with green and reddish-brown patches. The only addition was the customary black crosses and, in some cases, the tactical numbers.





III 'Nizza' group AB 41s in North Africa, 1942. The unit used tactical recognition markings larger than usual, the colours and number of stripes denoting the company and the platoon. (Cappellano)

An AB 41 still finished in the standard olive green used by the Italian army in the post-war period. The main feature distinguishing the AB 41 from the AB 43 was the turret, which had a different shape and lacked the visor slots in the front. (Cappellano)



a combination of circles, triangles and lines (one to three) in various colours (red, white, orange, blue, green, black) and positions (vertical or horizontal lines, triangles pointing upwards, downwards or to the sides) to denote squadrons and platoons. The 1938 symbols were based on rectangles, also in various colours, with a series of vertical white stripes (from one to four, whenever a fourth platoon

existed) to denote the squadron and the platoon. The first squadron colour was red, followed by light blue, yellow and green. Command tanks had no stripes, platoons being designated by the number of stripes used. Those symbols were usually painted on the turret, more rarely on the hull sides, and sometimes with numbers added to denote the vehicle within the platoon.

The FIAT 611 armoured cars in police service were painted overall light blue, the police colour, and had the police badge (cap badge) added on either the turret or the hull. After they were pressed into army service they were repainted overall grey-green, apparently maintaining the colour until 1940–41.

While tanks retained the overall grey-green colour, in 1939–40 armoured cars switched to sand. The first prototypes of the AB 40 were painted overall sand with green or green-and-brown streaks. The same type of camouflage was also used with the modified FIAT Terni-Tripoli in North Africa. The AB 40 also had a large white disc painted on top of the turret, for aerial recognition. The overall sand colour was maintained with the subsequent production batches of the AB 40–41, which, being mostly sent to North Africa, had no coloured streaks added. Those serving in the Balkans usually had green, or green-brown streaks. To improve aerial recognition a large, white cross of Savoy was painted on the front hull and (mostly with the 'Sahariana') a large red, white and green national flag was also painted on the engine covers. In some cases, apparently in late 1942, this flag was also painted on the hull sides and front.

In 1943 a new camouflage scheme was introduced, made up of large green and brown blotches on overall sand. When the new camouflage was applied by units on the field the shape of the blotches was irregular, showing more of the overall sand finish. The Autoprotetto SPA S 37s used in the Balkans were also painted overall sand, with green and green-brown blotches added. Some were repainted overall grey-green. The 'Sahariana' fighting in Italy also used the three-tone camouflage, those fighting in the desert usually being painted

overall sand. Also the rectangle unit marking in use with all Italian armour was retained. Only a few units had specific markings, in fact the badges and insignias of the unit itself, most notably the PAI and the III 'Nizza' group.

Most of the Italian armoured and reconnaissance vehicles captured by the Germans or produced in 1943–44 retained the original Italian camouflage. The original plates were also retained, but not the unit markings. In any case, the Germans added the standard 'Balkenkreuz' (cross with arms) black with white outlines, painted on the front and sides of the vehicles. Instead of the Italian rectangles the Germans used their standard numbering system, the three numbers denoting the company, platoon and vehicle inside the platoon. Field camouflage patterns, different from the standard ones, could and would be applied by the crews using available colours, particularly with the Autoprotetto and with the 'Lince' armoured car.

Post-war armoured cars in use by the Italian army were repainted olive green, the finish they are mostly likely to have now whenever the surviving vehicle is on show in some military establishment. The colour used by the Italian police for their 'Sahariana' is unknown. Apparently those vehicles were painted red in the post-war years. They usually also sported the police badge on their turrets and hulls.

SURVIVING VEHICLES

Given their post-war use several samples of Italian armoured cars have been retained by museums and even privately acquired, mostly the AB 41 and AB 43. Three 'Linces' are still on display, along with the only 'Autocarro Dovunque Protetto 35' ever produced, that has been preserved and restored by a private collection. Some of the AB armoured cars are in running order, and one of the surviving samples of the Ansaldo-Lancia 1 ZM has a story behind it. This is the sample donated to the king of Afghanistan whose wreck (with most of the original vehicle parts) was recovered following ISAF (International Security Assistance Force) intervention. After a full restoration, it is now on display at Dresden, Germany.

The following list is of interest:

Museo Storico della Motorizzazione Militare (Cecchignola, Rome, Italy): two AB 43s (one of which is a 'ferroviaria'), and one 'Lince' currently on display. One AB 41 has been reported to be in their possession.

Museo di Guerra per la Pace Diego de Henriquez (Trieste, Italy): amongst others it has on display one AB 43 (featuring the rear turret basket common with the vehicles of IV 'Nizza' group), and one Ansaldo-Lancia 1 Z.

1st 'Nizza' Cavalry Regiment (currently at Bellinzago, Italy from Pinerolo): on display one AB 41.

Reggimento 'Savoia Cavalleria' (3°) (Beraudo di Pralorno barracks, Grosseto, Italy): on display one AB 41, one AB 43.

Reggimento 'Piemonte Cavalleria' (2°) (Villa Opicina, Trieste, Italy): on display one AB 41.

Scuola di Cavalleria (Lecce, Italy): on display one AB 41, one 'Lince'.

Side view of an AB 43 armoured car, showing the new type exhaust and a different position for the spade. Also of interest are the details of the hull halved door, and the new type turret. (Cappellano)



Museo Storico dell'Arma di Cavalleria (Pinerolo, Italy): on display one non-restored AB 43.

Museo Storico dell'Aeronautica Militare (Vigna di Valle, Italy): on display, amongst aeroplanes, one AB 41.

Museo Memoriale della Libertà (Bologna, Italy): on display one AB 43.

Museo dell'Industria e del Lavoro (Brescia, Italy): on display one AB 41.

ASPHM Association (La Wentzenau, France): on display one AB 41.

Museum of Military History (Johannesburg, South Africa): on display one AB 41.

El Alamein Battle Museum (El Alamein, Egypt): on display a non-restored AB 41.

Mr Fabio Temeroli collection (San Marino): a private museum that has on display one fully restored AB 43 and the fully restored sample of the 'Autoprotetto Dovunque Protetto 35'.

Mr Vincenzo Lancia collection (Turin, Italy): one 'Lince'.

APPENDIX

Specifications

Vehicle	AB 40-41*	AB 43	'Sahariana'
Crew	4	3	1 + 3
Weight	6/7.4 tons	7.8 tons	4.5 tons
Dimensions			
Length	5.20m	5.41m	5.62m
Width	1.92m	1.92m	2.26m
Height	2.48m	2.48m	1.80m
Armour			Unarmoured
Front	18mm turret, 8.5mm hull	22mm turret, 8.5mm hull	
Sides/rear	10mm turret, 8.5mm hull	10mm turret, 8.5mm hull	
Floor/Roof	6mm	6mm	
Powerplant	SPA 6T engine, 80hp at 2,700rpm	SPA ABM 3 engine, 100hp at 2,800rpm	SPA ABM 3 engine, 110hp
Speed			
Max (road)	75km/h	81.2km/h	84km/h
Off-road	20km/h	-	-
Range			
Road	400km	460km	720km + 680km (with fuel canisters)
Off-road	8 hours	8 hours	
Armament	20mm Breda 35 gun, 456 rounds 2 x 8mm Breda 38 MG 1,992 rounds	20mm Breda 35 gun, 408 rounds 2 x 8mm Breda 38 MG 1,704 rounds	47/40 gun, or 20mm Breda 35 gun, or 20mm Solothurn AT rifle, plus 8mm Breda 38 MG
Ground clearance	30cm	35cm	41cm
Wading depth	70cm	Not available	Not available
Trench crossing	Not available	Not available	Not available
Vertical obstacle	30cm	Not available	80cm
Climbing ability	50 degrees	30 degrees	50 degrees
* whenever two figures are given, the first refers to the AB 40			

Vehicle	Autoprotetto SPA S 37	'Lince'
Crew	1 + 8	2
Weight	5.55 tons	3.14 tons
Dimensions		
Length	4.95m	3.82m
Width	1.92m	1.75m
Height	2.13m	1.65m
Armour		
Front/sides/rear	8.5mm	30mm (vertical)
Floor/roof	6mm	12mm (sloped) 5 (roof)/4 (floor)mm
Powerplant	18 VT engine, 67hp at 2,500rpm	Lancia 8V engine, 85hp at 1,500rpm
Speed		
Max road	52km/h	86km/h
Off-road	-	-
Range		
Road	300km	300 to 350km
Armament	1 x 8mm Breda 38 MG (AA mount)	1x 8mm Breda 38 MG, 30 magazines
Ground clearance	38cm	30cm
Wading depth	Not available	Not available
Trench crossing	Not available	Not available
Vertical obstacle	Not available	Not available
Climbing ability	40 degrees	30 degrees

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